



MYcroscopy

As Unique As You Are!

The New Leica DM Microscopes for Research Laboratories

Leica

MICROSYSTEMS

In a Class of their Own

The New Leica DM Series: As Unique As You Are

As a leading microscope and scientific instruments manufacturer, Leica Microsystems is at home in research facilities around the world – including those that pursue groundbreaking work and push the envelope of life science discovery.

A brief look at the new Leica DM Microscope Series reveals the reasons. As with all Leica products, customer requirements and needs have guided research and development. The result is a line of microscopes that are in a class of their own. The Leica DM Series combines optical excellence with an ergonomic design, and can be uniquely tailored to **your** research work. Leica Microsystems' uncompromising range of features provides the microscope system you need to achieve perfect results efficiently and comfortably in your particular field of research.

The outstanding brilliance and clarity of the images and the ability to use the full range of contrast and light microscopy techniques reveal the delicate structures of the most difficult-to-image specimens – Leica combines these high-end optical qualities and offers them for a competitive price in this performance class.

Leica's digital imaging program is optimized for the Leica DM Series with image analysis and image management capabilities. The program includes digital cameras, image processing workstations, and sophisticated software for image organization and archiving. As a one-stop vendor, Leica offers laboratory equipment that meets your needs for the highest quality imaging and durability for rugged, everyday use – equipment that is specifically designed for the day-to-day challenges of life science research.



Leica Design by Christophe Apothéloz

Outstanding Possibilities ×4

The ability of a microscope to reveal the unseen determines its usefulness for demanding research. A user must consider the quality of the optics and the range of contrast methods supported by the microscope. The new Leica DM Series provides a wealth of application options, and features four microscope types distinguished by the tasks for which they are intended. All four models can be configured to a user's specific needs, and share a carefully thought-out design for convenience and efficiency, as well as outstanding optical qualities.

Outstanding Features...

All four models are especially suited for research fields that depend on sophisticated contrast methods. The excellent optics are identical, but the range of features is adapted to different application areas.

...For Your Unique Application

Leica DM3000

The automated DM3000 (with 30 W illumination) promotes work efficiency with a high level of comfort. Its additional features:

- a motorized objective turret
- an automated condenser
- automatic adjustment of the light intensity to the light requirements of the individual objectives

Applications:

- brightfield, darkfield
- phase contrast
- polarization contrast
- differential interference contrast (DIC)
- fluorescence microscopy

Sophisticated focusing:

- 5 focusing functions (coarse, medium, fine, focus height stops, adjustable torque)
- alternatively, a conventional 2-gear mechanism
- integrated thermal compensation for focal drift to stabilize stage height during long-term observation, for consistent image sharpness.

Leica DM2500

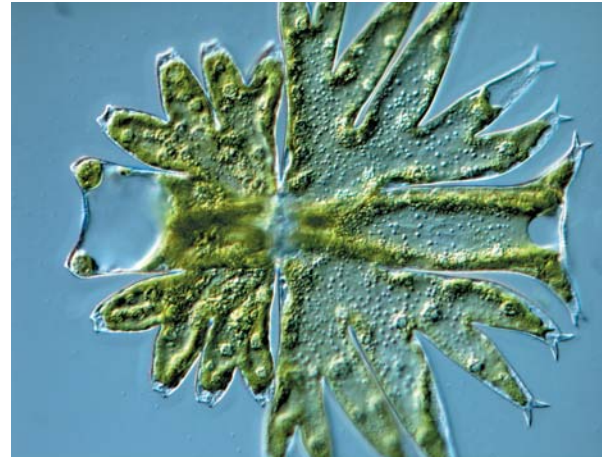
The DM2500 with its powerful 100 W illumination, is ideal for highly light-absorbent specimens and DIC.

Leica DM2000

The DM2000 offers the same no-compromise selection of contrast methods as the DM2500, but features 30 W illumination.

Leica DM1000

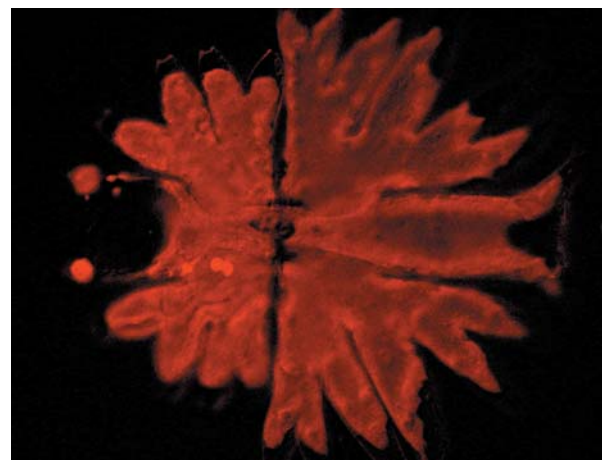
The Leica DM1000 is the right microscope for the highest possible brilliance, but without DIC. Optically, it meets the same standards as the DM2500 and can also be used as a fluorescence microscope.



Micrasterias, DIC method



Micrasterias, DIC/fluorescence method



Micrasterias, fluorescence method

Brilliance Wherever You Look

MYcroscopy: The Optical Features You Need

Razor-sharp contrast, precise contours, and brilliant fluorescence that reveal even the finest structures of extremely low-light specimens; in terms of brilliance, the Leica DM Series leaves nothing to be desired. Leica offers a wide range of objectives – from planachromats with optimal field flattening to apochromats with the highest resolution – and the ability to use high-end contrast methods.

Outstanding objectives:

Leica's new HI PLAN Planachromat objective series delivers images of astonishing clarity with significantly improved image flattening and chromatic correction.

Continual adjustment of the illumination intensity becomes a thing of the past with Leica Microsystems SL (Synchronized Light) objectives. The new planachromat HI PLAN SL Series maintains the brightness level at 4x, 10x, and 40x magnifications and your preferred color impression is preserved.

Leica's special HI PLAN CY 10x/0.25 objectives feature excellent field flattening and color correction, while offering the long working distance of 12 mm. These objectives are also available in an SL (Synchronized Light) version.

A quick overview can be obtained with all four models using the optional 1.25x screening objective.

The choice is yours: Use objectives from any Leica performance class. The objective turrets of the DM2500 and DM2000 offer you a choice of six or seven positions. The DM1000 can accommodate five objectives. The DM3000 features an automated six-position objective turret. The DM2000, DM2500 and DM3000 are suitable for all applications requiring differential interference contrast. The only difference is the light source (30 W/100 W). In all three cases, interference contrast can be installed as an option.



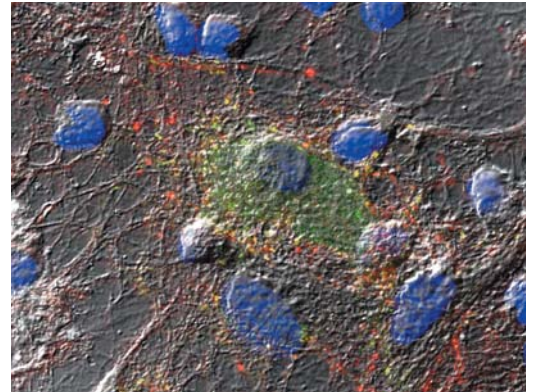
Fluorescence without compromise

All four microscopes are optionally available with a solid, high-quality fluorescence axis. The fluorescence axis for the Leica DM3000, DM2500 and DM2000 features five filter block positions on an easy-to-turn disk. If more filter blocks are required, the convenient quick-release allows replacement blocks to be easily snapped into place.

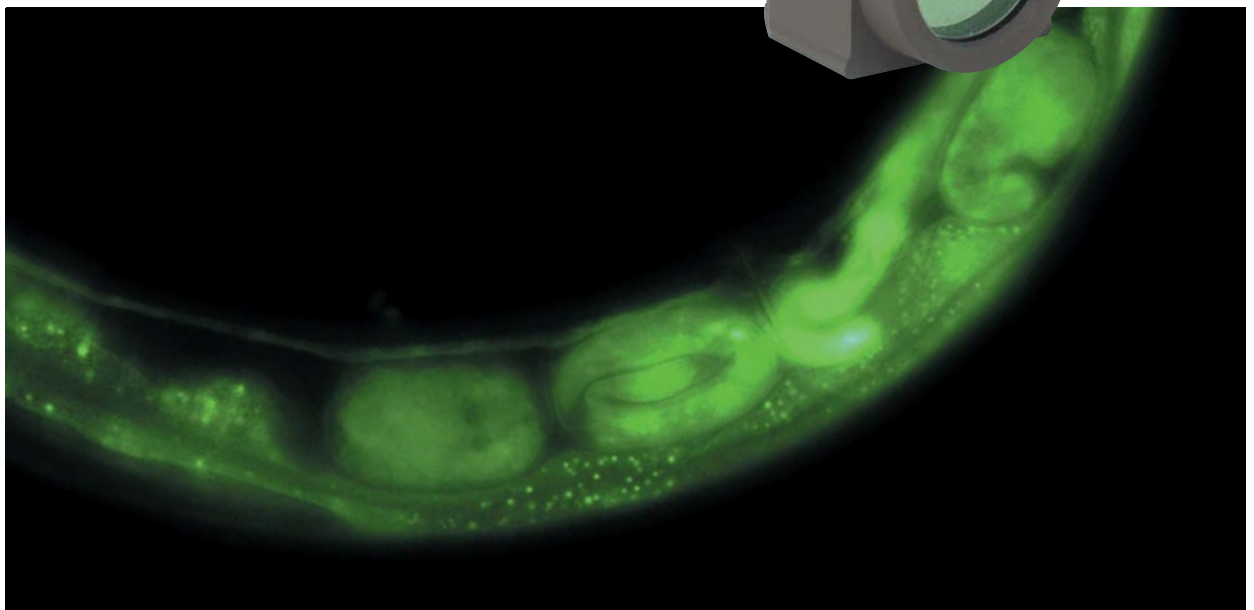
The Leica DM1000 features three filter block positions on a slider. Like the Leica DM2000, DM2500 and DM3000, the slider features Zero Pixel Shift for field numbers up to 25.

Fluorescence filter blocks

The fluorescence axis of the Leica DM3000, DM2500 and DM2000 is designed for all filter blocks of Leica Microsystems' high-end research microscope range. Optimized transmission is a hallmark of the microscopes' outstanding performance. The range of life science applications is covered completely, from routine FITC to GFP markers. The need for additional BG38 filters is now a thing of the past because the new Leica K filter blocks already integrate this capability. Leica Microsystems' broad range of commonly-used filter blocks is also available for the DM1000. All contrast methods can be used on each of the DM Series models without exception.



Primary hippocampal mouse neurons



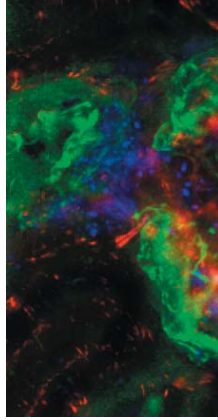
C. elegans, GFP-Expression

Brilliance Wherever You Look

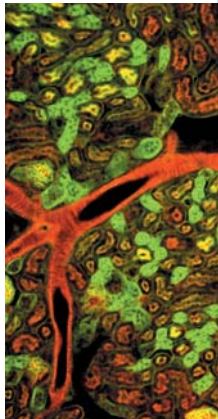
Intelligent optical components:

All Leica filter blocks feature Zero Pixel Shift to prevent image shifting when changing blocks. As a result, images can be super-imposed accurately, are always razor-sharp, and match perfectly without tedious correction work.

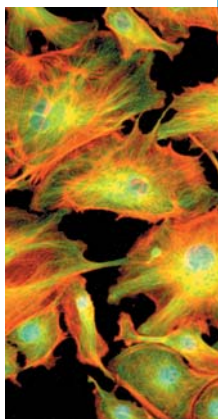
Set the aperture with a single touch: The scale of the aperture features color markings that are color-coded to match the color of the objectives. Simply match the colors and the aperture is set.



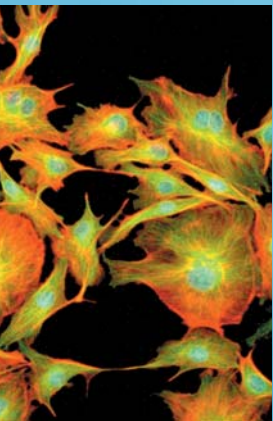
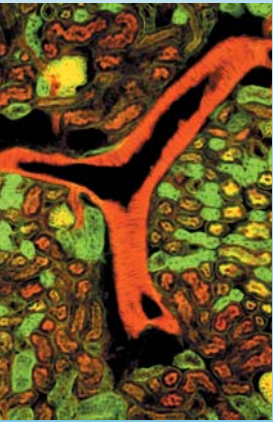
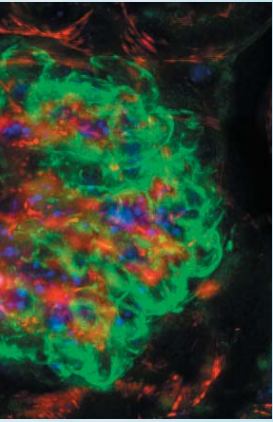
Mouse kidney section



Mouse kidney section



BPAE cells with mouse a
Photo: Molecular Probes



anti- α -tubulin



Faster, Easier, More Efficient

MYcroscopy: Uniquely Designed for Efficiency

Frequently, research laboratories operate under time pressure – when specimens require more attention than usual, when unforeseen events occur, or when the findings were due yesterday. Leica Microsystems' new DM Microscopes are up to the challenge with features that ensure speed and efficiency.



Quickly change specimens with Leica new slide holders that are designed so that slides can be changed in a single motion with one hand.

Focus and stage adjustments can be performed with just one hand. The other hand remains free for other activities such as operating the PC.

The modern stage design is rounded with no protruding parts. The whole design is compact and requires minimal space.

The stage is built to last with a surface of hard ceramic that is durable enough to take years of demanding use.



...and Greater Comfort

MYcroscopy: Concentration Depends on Comfort

Long hours of work in the research laboratory can be hard on the body. One reason for this is that many laboratory activities force the scientist to adopt a poor posture, which can result in muscular tension and pain. Now, when it comes to microscopy, this discomfort is history: The Leica DM Series Microscopes adjust perfectly to the physical needs of individual users – quickly, easily, and with minimal effort. They are designed to be easy on the user's body; to help prevent poor posture so that the user can maintain a high level of concentration for long periods of work. Comfortable microscope use also promotes higher productivity in the laboratory.

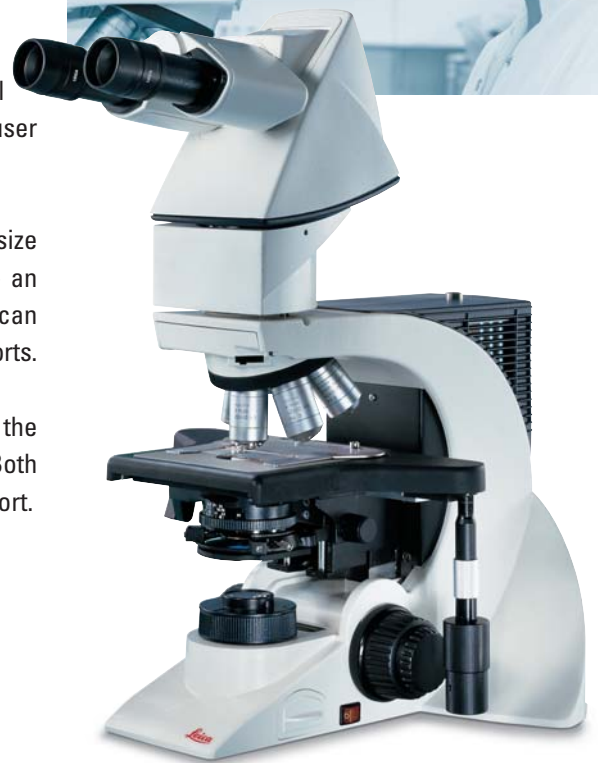
The unique left-right operation allows the controls to be switched over from the right- to the left-hand side of the microscope quickly and easily. Only one hand is required for focusing, and a user can decide which hand to leave free for other activities such as note taking.

It is apparent with one glance into the eyepieces that the user's neck stays relaxed while viewing. Flexible adjustment or a fixed viewing angle of 15°, various tube lengths, and convenient height adjustment accessories help in this respect.

Users automatically adopt a natural, comfortable position, even after extended periods of work. The symmetrical arrangement of the stage and focus controls help promote user comfort at the microscope.

The height of the focus controls can be adjusted to match the size of the user's hands for a relaxed hand and arm position – an unparalleled advance in microscope design. The adjustment can be made in seconds, which eliminates the need for wrist supports.

The individual user's seated height can be accommodated by the Leica DM Microscope's optional ErgoLift or ergomodules. Both options represent a small investment for a major gain in comfort.



Intelligent High-Speed Microscopy...

MYcroscopy: The new, automated Leica DM3000

Faster, more convenient and more efficient: The intelligent, automated Leica DM3000 optimizes work in research laboratories in every respect – with proven adaptation to a user's physical requirements. With advanced features such as its unique toggle mode and automated condenser, the new DM3000 provides outstanding prerequisites for fast, reliable results. Ease of use meets ergonomic design.



Automatic light adjustment for each objective change: The Leica DM3000 automatically sets the light intensity to the appropriate level for the given magnification. The most recently used values are stored for each objective. The brightness impression remains constant for the observer and strong changes of intensity are avoided for extended working sessions without eyestrain.

The Leica DM3000 also knows the ideal condenser settings for each objective: The condenser head automatically swings out for objectives with a magnification lower than 10x and returns to proper position for higher magnifications. One less manual action – for fast, convenient work. The user can also adjust the position of the condenser head individually for special applications.



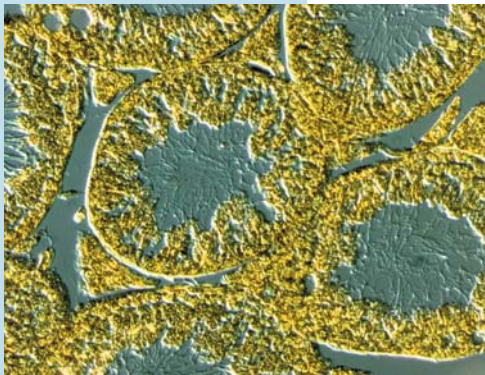
Higher efficiency and greater convenience thanks to intelligent automation: The motorized objective turret changes magnifications in only half a second. Two ergonomically positioned buttons behind the focus knobs control the turret position. Six more buttons on the base of the microscope are assigned to the six individual objectives. Any two objectives can be assigned to the unique toggle mode. An optional footpedal is also available, leaving the user's hands free for other activities.



Digital Photography

MYcroscopy: Leica Microsystems' Premium Digital Cameras Open New Possibilities for Your Work

Digital recording of specimens has a number of benefits. Digitized images can be analyzed for data not easily seen by the human eye. Leica Digital Cameras provide the preconditions for razor-sharp, brilliant images with uncompromising color fidelity. They feature a FireWire link interface for fast digital processing. Leica offers a wide variety of application-specific cameras to address your imaging requirements.

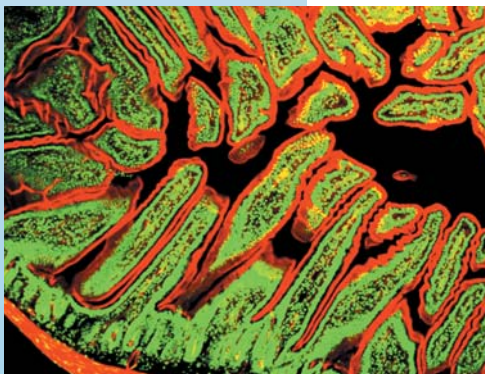


Testis of mouse showing spermatogenesis

Leica's full line of digital cameras features ease of use, image clarity, and excellent color fidelity – everything needed for precise image analysis, documentation, and reporting.

To meet the high demands of fluorescence photography, Leica has developed digital cameras that deliver brilliant images even from very faint fluorescence.

The finest structures and most subtle color nuances are captured by a high-end Leica digital camera with 12 million pixels, a color depth of 42 bits RGB and exposure times of up to 600 seconds. The camera is suitable for contrast methods as well as bright- and dark-field – intuitive and convenient even with extremely low-light specimens.



Mouse intestine section
Photo: Molecular Probes



Image Analysis and Organization

MYcroscopy: Image Management Tailored to Your Laboratory's Requirements

The analysis and management of digital images calls for solutions that are precisely tailored to a user's unique laboratory requirements. Leica provides a variety of image analysis solutions that harmonize perfectly with Leica digital cameras and image management software packages.



Leica DM2500

Leica Microsystems FW4000 Fluorescence Workstation is an imaging solution that through advanced camera, sequence control, and enhancement options, optimizes images during the capture process. Images are then further processed using a wide range of software options.

Leica products cover many other applications from Leica QWin, a general-purpose image analysis application, to specialized workstations for cytogenetics laboratories. All were developed in close cooperation with researchers working in the relevant fields to ensure that they deliver genuine solutions and truly enhance the laboratory work for which they were intended.



Leica DM4000

Leica Image Manager:

The complete image management solution

Leica Image Manager software provides a quick, simple, and complete performance package for digital image recording, editing, measurement, output, exchange, and backup. The archive structure of the database is pre-set in such a way to adapt quickly and easily to a laboratory's workflow. With the Image Manager, a user can simultaneously locate images with ease and quickly monitor processes. The functions for image storage in external archives and fast, direct e-mailing of images add to its convenience.

Leica Image Organizer:

Store and locate images in a snap

Images from all applications can be stored under a variety of categories at the same time using the simple storage and search functions of the Leica Image Organizer. The Image Organizer simplifies the retrieval of stored images and provides space to record additional information. A sophisticated search function additionally supports the use of various criteria to easily locate images and data.

When used with the Leica DM3000, the position of the objective turret can be read and the calibration adjusted automatically. To verify a specimen with the same settings or capture a control specimen with identical parameters, simply restore the settings with Store and Recall.



Leica Microsystems – the brand for outstanding products

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

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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and representatives of Leica Microsystems
in more than 100 countries.

The companies of the Leica Microsystems Group operate internationally in four business segments, where we rank with the market leaders.

● Microscopy Systems

Our expertise in microscopy is the basis for all our solutions for visualization, measurement and analysis of microstructures in life sciences and industry. With confocal laser technology and image analysis systems, we provide three-dimensional viewing facilities and offer new solutions for cytogenetics, pathology and materials sciences.

● Specimen Preparation

We provide comprehensive systems and services for clinical histo- and cytopathology applications, biomedical research and industrial quality assurance. Our product range includes instruments, systems and consumables for tissue infiltration and embedding, microtomes and cryostats as well as automated stainers and coverslippers.

● Medical Equipment

Innovative technologies in our surgical microscopes offer new therapeutic approaches in microsurgery.

● Semiconductor Equipment

Our automated, leading-edge measurement and inspection systems and our E-beam lithography systems make us the first choice supplier for semiconductor manufacturers all over the world.

 www.MYcroscopy.com


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