

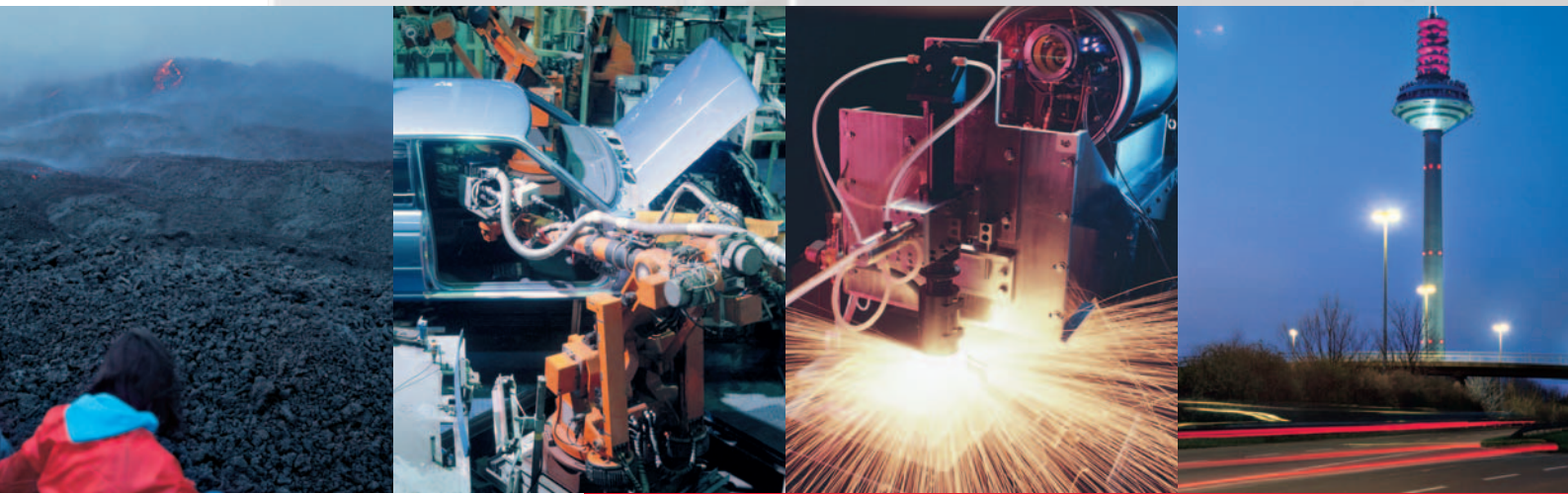


Leica DM4000 M

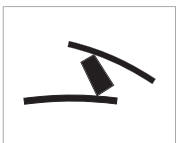
Simply Microscopy!
The New Leica DM DigitalMicroscopes

Leica
MICROSYSTEMS

Intelligence Comfort Brilliance Integration



**This is why you entered Science.
It's what you work for every day.
Now let the new Leica DM
DigitalMicroscope help you
make that brilliant discovery!**



Leica Microsystems AG – Winner of the World's First Innovation Award:
German Business Innovation Award 2002

Perfection At Work – Simply Microscopy!

The Exterior: New Technology in a New Design

The first thing you will notice about our new DigitalMicroscopes is their new design: clear, attractive contours.

Looking Through the Microscope: Fascinating Insights

Once you have seen a sample through one of these new microscopes, you will never want to use any other. No microscope in this class can offer better image brilliance, field depth and contrast.

Just Rely On Your Intuition

Our new Leica DM DigitalMicroscope series provides the answers to many of our customers' problems. One of the most frequently voiced requests was to lighten the workload. So we found ways of doing a lot of the work for you. You can operate the microscope intuitively and easily automate complex routines to suit your specific needs.

Experts Call it Ergonomics. We Call it User-Friendly

Ergonomics is a word often used. On our new microscopes you can actually feel it. Cooperating closely with the Fraunhofer Institute*, our designers have not only outperformed the latest technological standards but also all the ergonomic specifications.

Our Product Range Caters For All Your Needs

Whatever you need for your examinations or research, we can supply it: the microscopes, the cameras and even the software for analyzing and archiving your images.

New All-Embracing Software

Parallel to the new Leica DM DigitalMicroscope series we are offering our own totally new software concept. All our hardware and software components are now controlled from one single interface.

*The Fraunhofer Institute IA0 (Stuttgart, Germany) investigates ergonomic aspects of various products. In cooperation with their industrial partners they develop industrial designs to suit highest ergonomic demands.



Leica DM4000 M with the basic BT25+ tube in a transmitted light configuration with the newly designed stage.

Your Benefits

Intelligence



An impression of clarity wherever you look: Customer-specific illumination and diaphragm adjustments can be made on the front left side of the microscope.



Everything you see in the display is stored automatically. All your results can therefore be reproduced at any time.

Automatic Diaphragm Adjustment

Our new DigitalMicroscopes automatically recognize the contrasting technique and objective that are currently in use. There is no need to adjust diaphragms – either in transmitted or in incident light. Unless you choose to.

Automatic Light Adjustment

The light intensity is automatically set to the light-gathering capabilities of the objectives. This means that the brightness of the specimen image remains constant when you switch to a different objective – and there is no danger of glare. Because every task has its own specific requirements, you can adjust the light intensity individually.

New: Transmitted Light Axis With Color-Neutral Brightness Control

Too dark for viewing – too bright for your digital camera: a white balance used to be necessary every time the lamp voltage was changed. The new transmitted light axis works with a color-neutral brightness control which automatically maintains a constant color temperature. You will no longer need to use neutral density filters to compensate for changes in light intensity.

New Condensers for a New Level of Automation

Our completely automated condensers will fulfill the most demanding requirements. You will never have to worry about the position of the condenser tops, it will automatically swing in and out of the light path for any objective from 1.25x to 100x.

Wherever You Look: An Impression of Clarity

All the settings of the Leica DM4000 M can be reviewed at a glance in the clearly laid out display: the contrast technique, the objective, the aperture and field diaphragm and the light intensity. Reproducible results are easier than ever before.

Comfort

Our Digital Microscopes Adapt to You in Every Way

Our new adaptable tube can be perfectly matched to your body size and posture. You can reach the focus knobs with your hands resting on the table. The new stage allows simultaneous focus and x-y movement control. So no matter what you are examining, you are completely relaxed – even if you sit at the microscope for hours at a time.

New Stages and Specimen Holders For Your Convenience

We have designed the new stages to satisfy the most demanding applications: the entire stage surface is ceramic coated and features telescopic stage drives with individually adjustable torque. The vertical stage position can also be adjusted with a simple hand movement to accommodate sample heights up to 30 mm. The standard stages are on ball bearings for precise rotation around the optical axis. They are suitable for one to two specimens and are available in a version for left-handed operation.

Variable Function Keys

You can assign any function you like to the six new function keys. Due to their convenient position behind the focus wheels, frequently used functions are always within easy reach. We had your comfort in mind.

Five New Viewing Tubes for Pin-Sharp Images

To match our new Digital Microscopes, we have devised a viewing tube series that will meet the highest requirements. Our new documentation tubes (which can be motorized on request*) have three switching positions and are fitted with either one or two camera ports. The new adaptable tube can be optimally adjusted to your needs. And of course, you will also find an ergonomometry tube with documentation port in our product range.

New 1.25x Scanning Objective

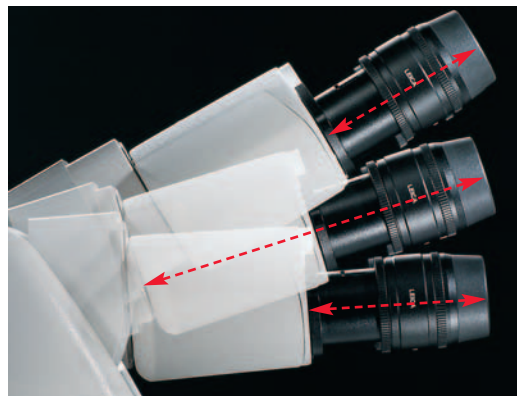
The new 1.25x panoramic objective is especially intended for material sciences. Outstanding field depth, brilliant resolution and perfectly homogeneous illumination ensure excellent results for photographs taken at low magnifications.

* The motorized switchable tube MBDT25+ will be available from October 2003.



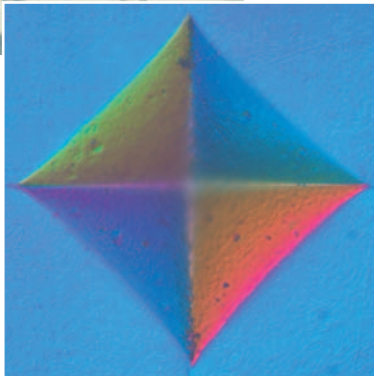
The newly designed industry stage with a travel range of 76 x 50 mm. 4" x 4", 6" x 4" and 6" x 6" stages are available for special applications. There is also a special stage for extra tall samples up to a height of 90 mm.

Brilliance

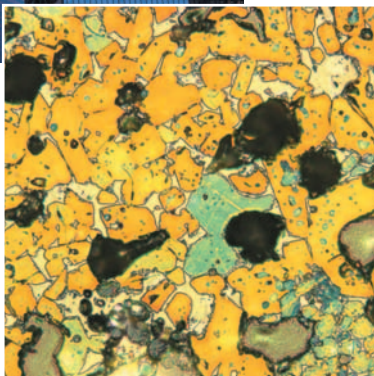


The viewing angle and height of the new AET22 adaptable tube can be individually adjusted to your sitting posture and body size. Plus you can vary the length of the eyepieces to suit the position of your arms.

Your Applications – Our Solutions



Microhardness imprint



Etched clinker, brightfield

Incident Light

The entire incident light axis is automated and features motorized aperture and field diaphragms that guarantee a hundred percent reproducibility. The 4-position reflector turret is also motorized and accommodates optical components for all incident light contrasting techniques. Two reflector positions have wider openings for the insertion of darkfield or Smith reflectors.

Incident Light Brightfield

It has never been so easy to use a microscope: just put a specimen on the stage and focus. The Leica DM4000 M recognizes the objective you have chosen, accurately opens and closes the aperture and field diaphragms and adapts the light intensity.

Incident Light Darkfield

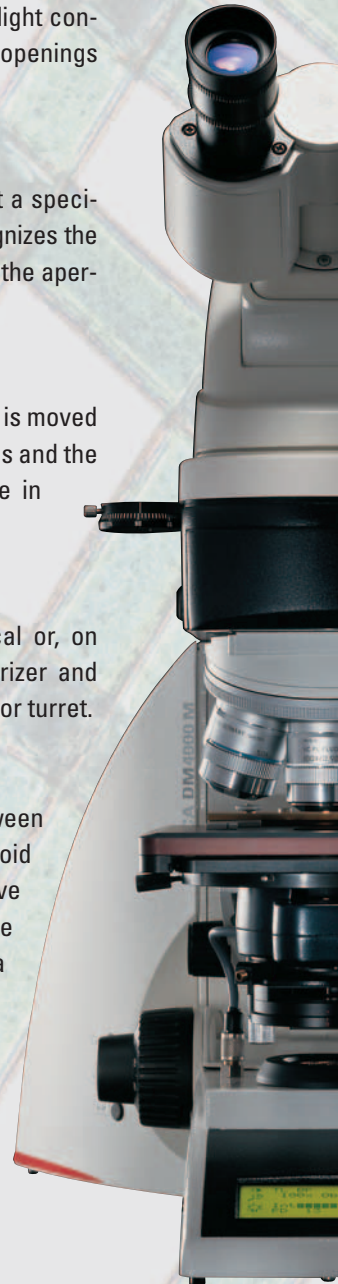
The darkfield block is situated on the reflector turret and is moved into the light path by motor control. All diaphragm settings and the lamp voltage are automatically adapted to the change in conditions.

Incident Light Polarization

Incident light polarization contrast is either mechanical or, on request, motorized. In the motorized version, the polarizer and analyzer are in the ICR reflector on the motorized reflector turret.

Incident Light Interference Contrast (ICR)

With the Leica DM4000 M you have the choice between semiautomatic or purely manual ICR operation. To avoid operator errors, the correct prism for the chosen objective is indicated in the display. This is simply slotted into the light path. The field-proven ICR system of Leica Microsystems only needs one prism for most objectives, saving time and money. Depending on your application, you can decide for yourself which is more important – contrast or resolution.



Transmitted Light

Apart from the motorized aperture and field diaphragms, the new transmitted light axis also features color-neutral brightness control that works in the background, maintaining a constant color temperature over a wide brightness range and making additional microscope and camera settings superfluous.

Transmitted Light Brightfield

You already know the aperture, field diaphragm and lamp voltage settings from incident light. In transmitted light, the condenser top for the chosen objective is additionally swung in or out of the light path automatically. And the automated, color-neutral brightness control also filters red and orange components out of the light at low lamp voltage settings.

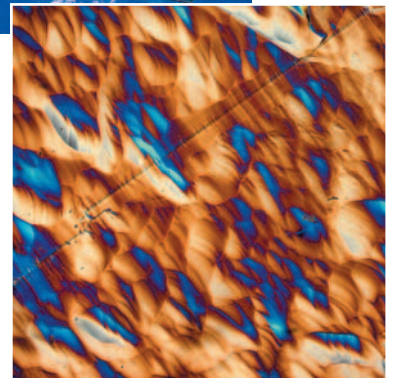
Transmitted Light Phase Contrast and Polarization

All the other contrasting techniques implemented in the Leica DM4000 M, such as phase contrast and polarization, are automated, too. Here again, the microscope knows and moves all the necessary components by itself.

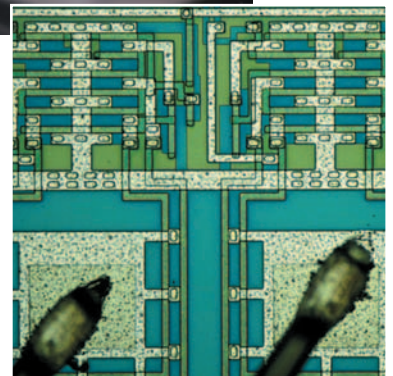
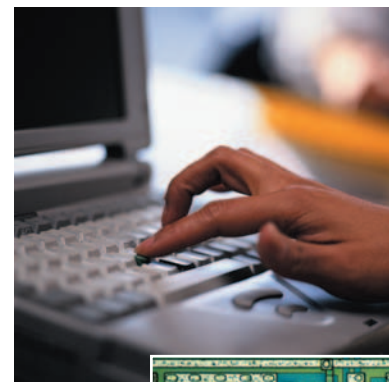
Single Keystroke Contrast Switching – Easier Than Ever Before

The method of changing contrasting techniques is unique. One press of the new function keys and the microscope switches between brightfield, darkfield polarization or interference contrast automatically. We have even assigned all the parameters for switching between incident and transmitted light techniques to one single key: the setting that was used last is restored.

Leica Design by Christophe Apothéloz

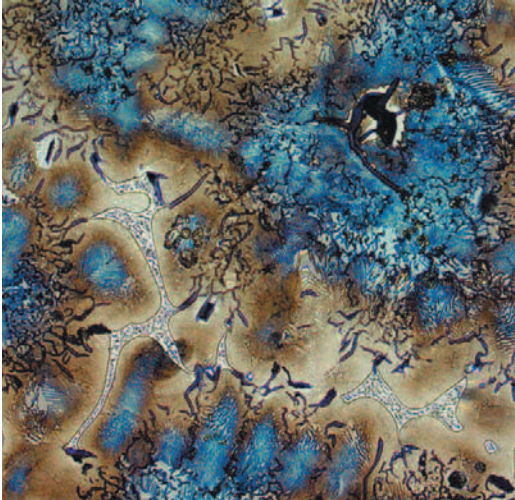


Solar cell, interference contrast



IC-chip, incident light

Your System Solutions



Grey cast iron, GG-18

The Choice Is Yours. Now and Any Time in the Future.

To go with the new DigitalMicroscopes we offer you a totally new software concept which allows you to upgrade your system at any time. All future software and hardware components of Leica will be controlled from the same interface.

Individual Microscope Configuration and Control

The user interface is extremely easy to use. Function keys, contrasting techniques and other microscope parameters are easily configured on the computer in accordance with your preferences or the needs of your working environment. Operator errors are practically impossible, which is particularly important in a routine environment. You can also use the software to remote-control your microscope.

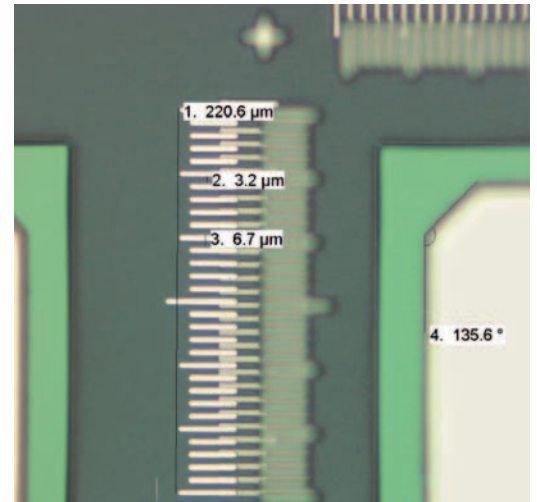


Cameras For Every Requirement

The Leica DC range of digital cameras offers the right camera for every requirement. From general to specific, our cameras are ideal: color or gray-level pictures of fluorescence specimens or industrial materials. There are cameras with a live image or real time video mode. The camera chips feature up to 12 megapixel image resolution. And with exposure times between a few μs and several minutes, every customer will find the camera for his or her application.

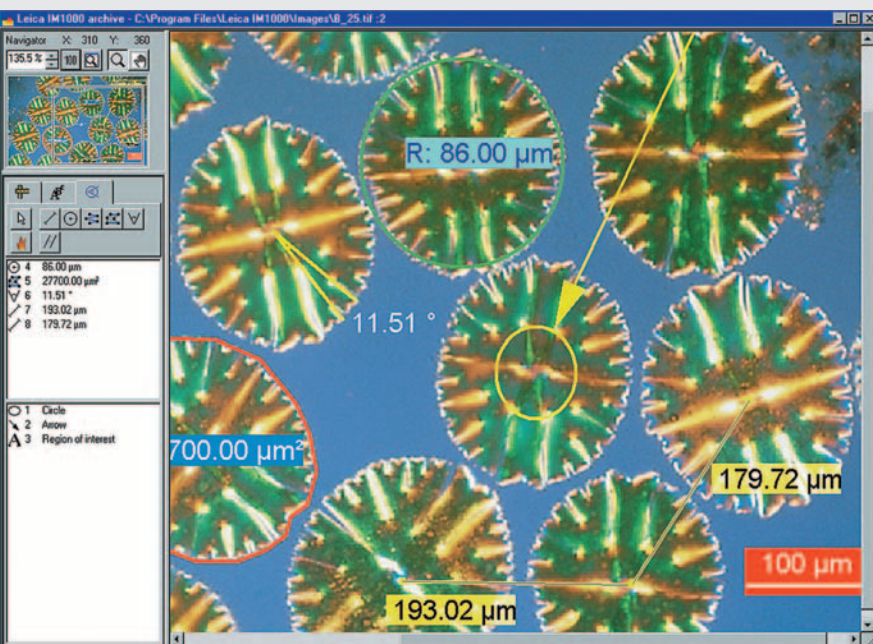
Perfect Image Archiving and Analysis

With Leica IM1000 archiving software you can create your own personal database environment in which you set up picture galleries, annotate images and store microscope parameters. The system's report tool prints ready-to-use reports, bearing your customer's logo if desired. The Leica MW Image Analysis System for material sciences comprises methods for grain size analysis, phase definition, layer measurement, etc. Or connect the Leica MHT10 to turn your microscope into a semi-automatic microhardness tester.



IC chip bond-measurement

Integration

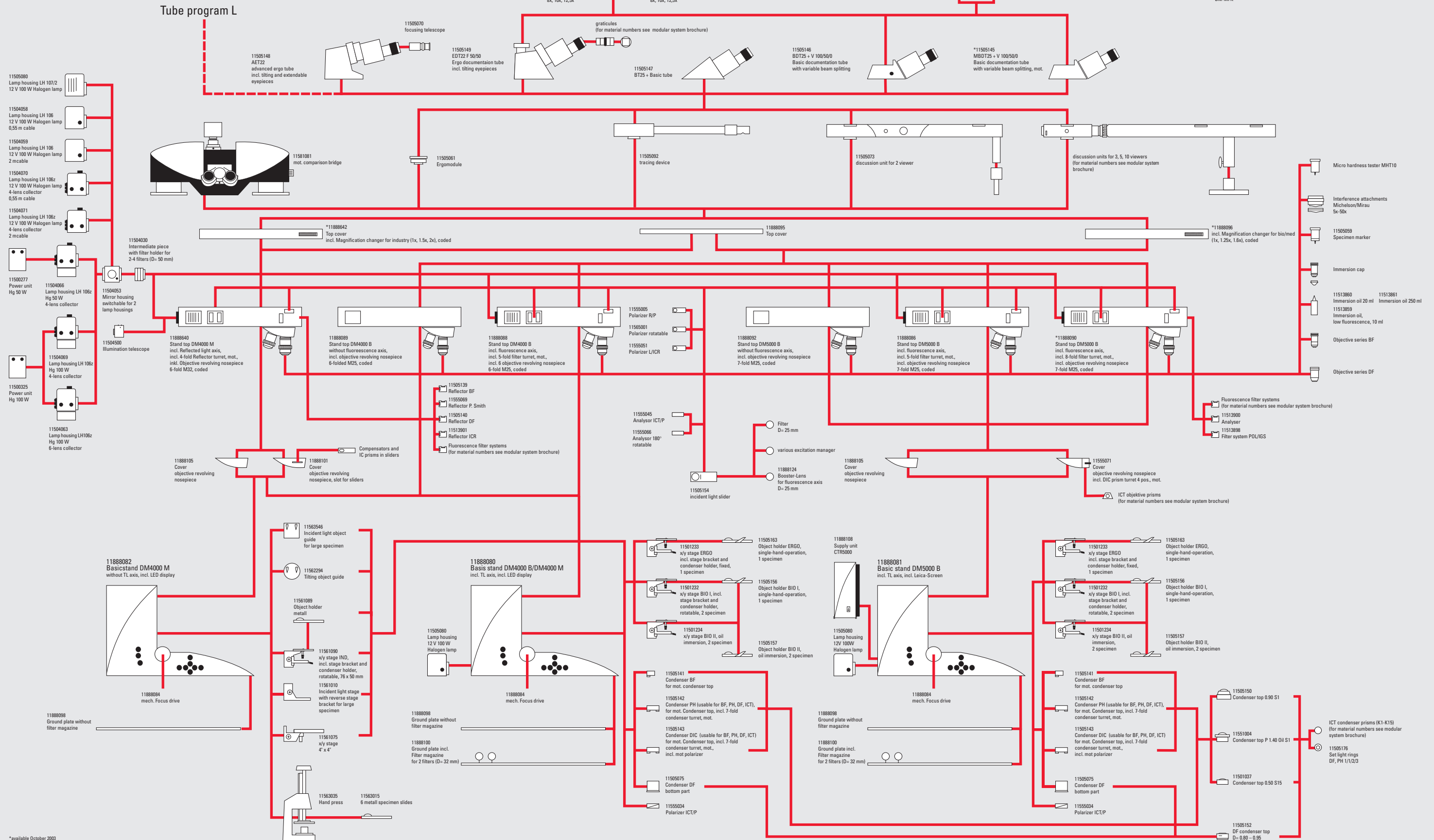


System Overview

Leica DM4000 B/DM4000 M/
DM5000 B

Camera systems
Leica SCR camera system
Leica MPS30/60
see brochure

TV Systems

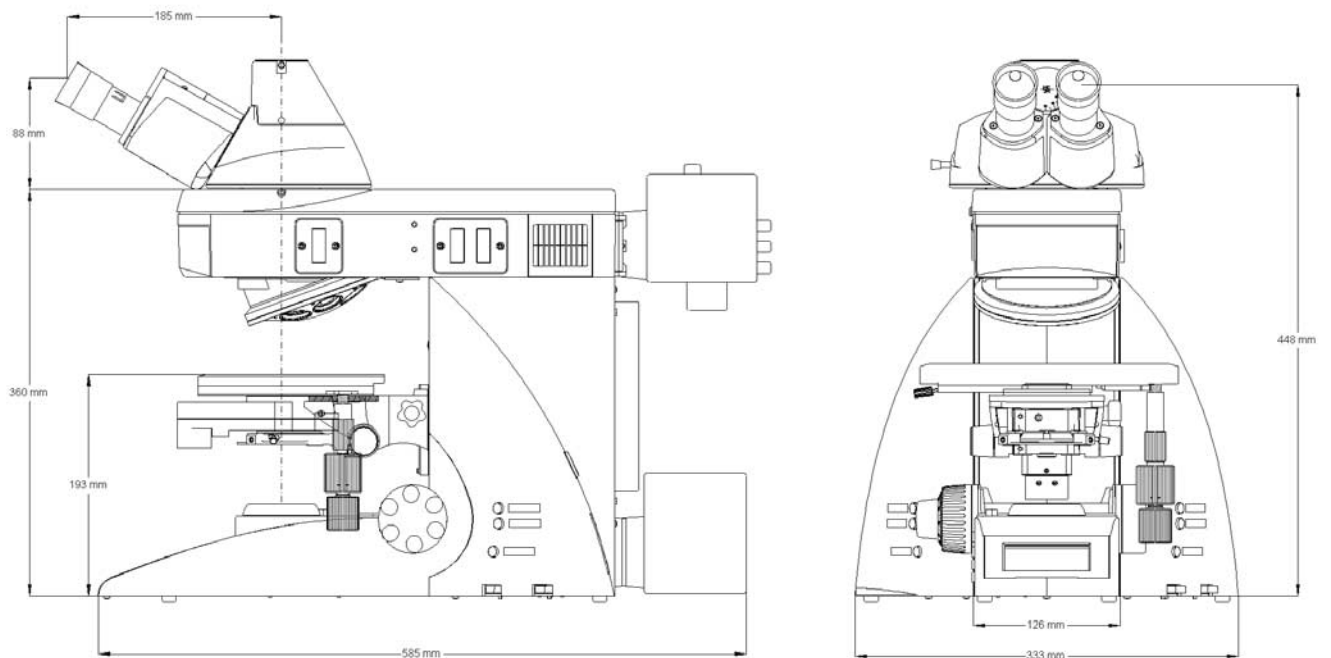


*available October 2003

Technical Data

Leica DM4000 M

Stand	Power supply Display	Integrated in stand - Information display (3.7x7.7 cm)
Incident light axis	Illumination	- 12V 100W halogen lamp - 100W Hg Lamp - 50W Hg Lamp
	Automation	Contrast and Light Manager (adaptation of light intensity, field and aperture diaphragms)
	Mot. reflector turret	4-position
	Contrast techniques	- BF (brightfield) - DF (darkfield) - POL (polarisation) - ICR (interference contrast for reflected light) - Fluorescence
Transmitted light axis	Illumination	12V 100W halogen lamp
	Automation	- Contrast and Light Manager (adaptation of light intensity, field and aperture diaphragms) - Constant Color Intensity Control (CCIC)
	Contrasting technique	- BF (brightfield)
Condensers	Automation	- mot. condenser top
Objective nosepiece		6-position M32, coded
Stages		- ceramic-coated - without rack on y drive - adjustable torque - telescopic stage drive - with 110° rotation - maximum sample height 45 mm/ 90 mm - left-hand version on request

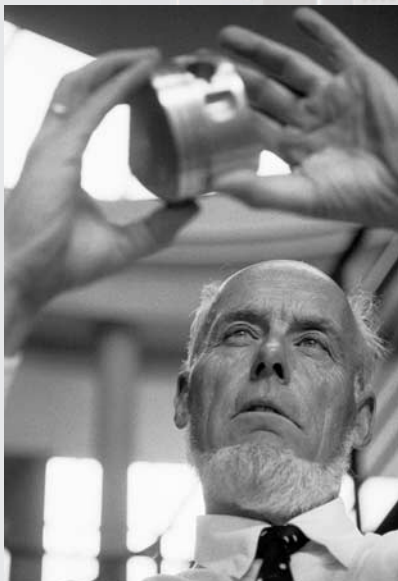




**“As a material scientist,
I want to concentrate on my
work, not on my tools”**

“Leica Microsystems provides me with the best tools imaginable for my research. When choosing a microscope or analysis system, I go for the one that gives me top quality information while offering the best possible operational convenience. My Leica materials workstation and research microscopes automate many manual processes, allowing me to concentrate fully on the images and data I need for structural research of high performance industrial materials.”

**Professor Dr. Dr. h.s. Hans Eckart Exner, Technical University of
Darmstadt, Germany**



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

Australia:	Gladesville	Tel. +61 2 9879 9700	Fax +61 2 9817 8358
Austria:	Vienna	Tel. +43 1 486 80 50 0	Fax +43 1 486 80 50 30
Canada:	Richmond Hill/Ontario	Tel. +1 905 762 2000	Fax +1 905 762 8937
Denmark:	Herlev	Tel. +45 4454 0101	Fax +45 4454 0111
France:	Rueil-Malmaison	Tel. +33 1 473 285 85	Fax +33 1 473 285 86
Germany:	Bensheim	Tel. +49 6251 136 0	Fax +49 6251 136 155
Italy:	Milan	Tel. +39 0257 486.1	Fax +39 0257 40 3273
Japan:	Tokyo	Tel. +81 3 5435 9600	Fax +81 3 5435 9615
Korea:	Seoul	Tel. +82 2 514 65 43	Fax +82 2 514 65 48
Netherlands:	Rijswijk	Tel. +31 70 4132 100	Fax +31 70 4132 109
People's Rep. of China:	Hong Kong	Tel. +852 2564 6699	Fax +852 2564 4163
Portugal:	Lisbon	Tel. +351 21 388 9112	Fax +351 21 385 4668
Singapore:		Tel. +65 6779 7823	Fax +65 6773 0628
Spain:	Barcelona	Tel. +34 93 494 95 30	Fax +34 93 494 95 32
Sweden:	Sollentuna	Tel. +46 8 625 45 45	Fax +46 8 625 45 10
Switzerland:	Glattbrugg	Tel. +41 1 809 34 34	Fax +41 1 809 34 44
United Kingdom:	Milton Keynes	Tel. +44 1908 246 246	Fax +44 1908 609 992
USA:	Bannockburn/Illinois	Tel. +1 847 405 0123	Fax +1 847 405 0164

and representatives of Leica Microsystems
in more than 100 countries.

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

● Microscopy

Our expertise in microscopy is the basis for all our solutions for visualization, measurement and analysis of microstructures in life sciences and industry.

● Specimen Preparation

We specialize in supplying complete solutions for histology and cytopathology.

● Imaging Systems


With confocal laser technology and image analysis systems, we provide three-dimensional viewing facilities and offer new solutions for cytogenetics, pathology and materials sciences.

● Medical Equipment

Innovative technologies in our surgical microscopes offer new therapeutic approaches in microsurgery. With automated instruments for ophthalmology, we enable new diagnostic methods to be applied.

● 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.simply-microscopy.com


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