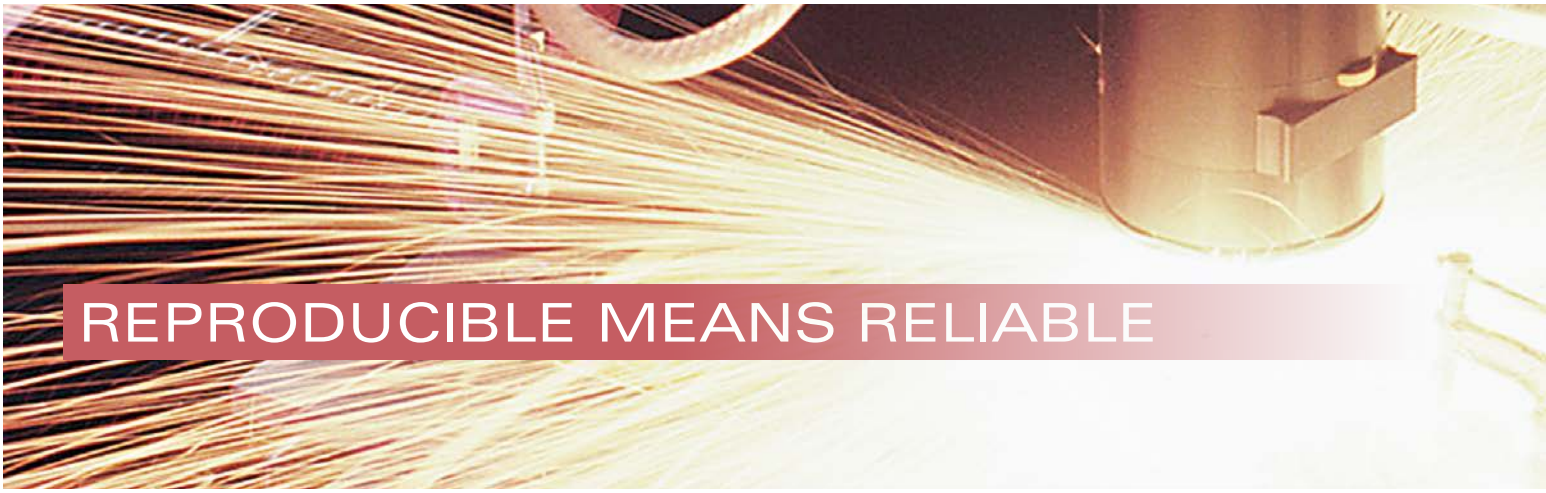


# SIMPLY MICROSCOPY SOLUTIONS FOR MATERIALS SCIENCE

Leica DM4 M

Leica DM6 M





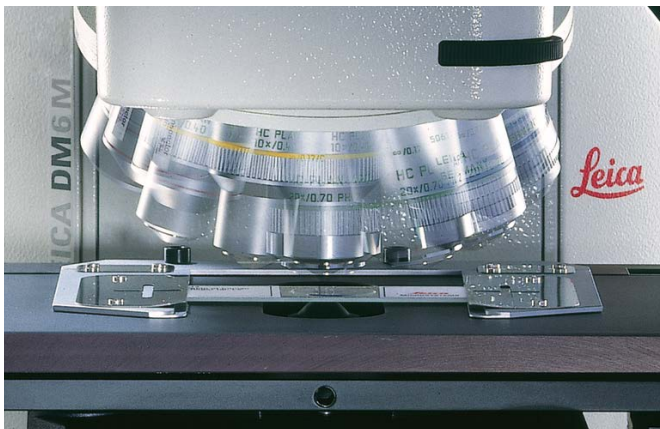
# REPRODUCIBLE MEANS RELIABLE

**Leica DM4 M and DM6 M digital microscopes for materials science and quality control offer truly reproducible microscopy, incredible optics and high quality images. Store and recall your imaging conditions with a touch of a button. High quality microscope images make challenging inspection, measurement, and analysis tasks easy.**



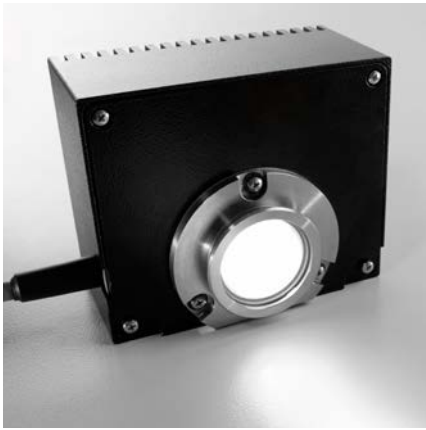
## **Consistency Throughout Your Workplace**

Companies with many laboratories and different inspection sites rely on comparable results – from wherever they originate. The Leica DM4 M and DM6 M allow users to easily save and share microscope and camera settings so that everyone can work with the same imaging and measuring conditions.



## **High-end Microscopy Made Simple and Motorized**

Coded and motorized components offer ease of use and reliable results even for untrained operators. Leica's illumination manager supports you by adjusting the light intensity to best reveal your sample's details. The contrast manager makes the change between contrast modes fast, easy, and secure.



### LED Illumination for all Contrast Modes

Whether you work in brightfield, darkfield, DIC or polarization mode, you can always observe your sample in the white light of Leica's LED illumination. LEDs do not generate heat, which protects the sample. The stable color temperature contributes to truly reproducible results. Plus, lower power consumption and the LED's approximate service life of 20,000 hours makes lamp replacements unnecessary.



### Two Solutions for Many Tasks

The Leica DM4 M and DM6 M are available in two standard configurations to match different applications and budgets: The manual-coded Leica DM4 M is the cost-efficient solution for routine tasks such as inspection of incoming goods in quality control. The coded functions ensure reproducible images and reliable data because the settings are stored with the images. The Leica DM6 M features intelligent automation throughout the entire microscope system. That's why it is the tool of choice for demanding research applications and for novice users alike.



# ABSOLUTE ACCURACY FOR THE BEST VIEW

**Reproducible microscopy means that you can recall the exact same imaging settings anytime, anywhere. With absolute accuracy. The manual Leica DM4 M and automated DM6 M have all the features needed to efficiently create precise and reproducible data, while minimizing the risk of errors.**



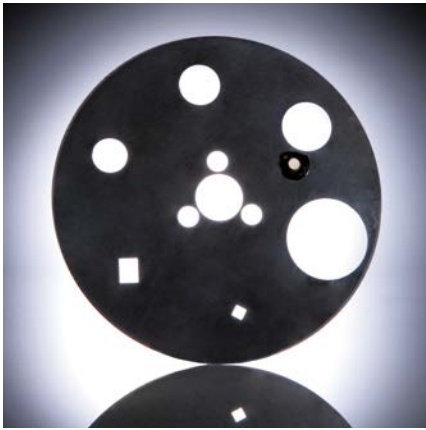
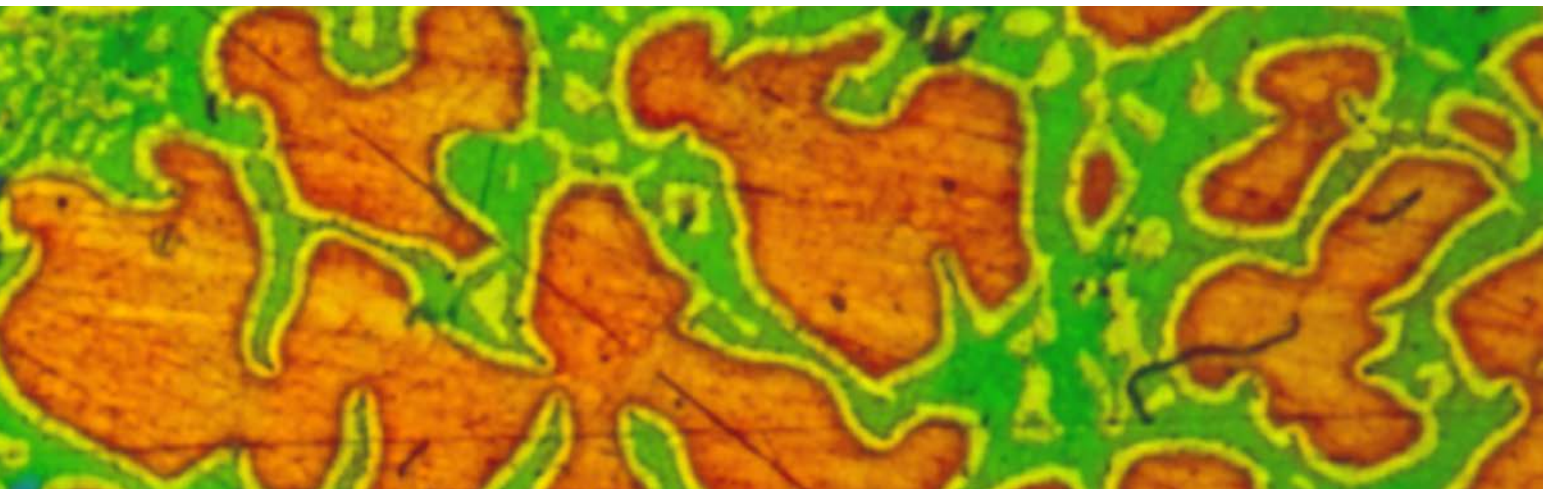
## **Always the Right Light: Illumination Manager**

Change between contrast modes and magnifications as often as you need – and be confident that you are using the correct illumination intensity. Leica's illumination manager automatically adjusts the light intensity according to the chosen contrast mode. Save the light intensity, aperture, and field stop values that you specify for every objective and recall these settings whenever needed.

## **Let the Contrast Manager Work for You**

The Leica DM4 M and DM6 M make it easy to change between various contrast modes: Choose a specific contrast mode, and in less than one second all components move into the light path. Plus, the microscope automatically adapts the illumination settings, brightness, and diaphragm position to that mode. In addition, the Leica DM6 M automatically adjust the parfocality. No need for time consuming adjustments – simply let the system do the work for you. This ultra-easy operation helps avoid errors and ensures absolute reproducibility – no matter who operates the microscope.





### **A Diaphragm Disc for Reproducible Results**

Leica offers a disc with pinhole diaphragms of different sizes, which is the key to precise, reproducible, and fast results. Store the chosen field and aperture diaphragm for the objective in use – and be sure of have the same imaging conditions when you recall the settings. The pinhole on the disc automatically remains the same with nanometer accuracy. Choose a rectangular pinhole when working with a camera: the image section will match with the chip size of the camera and prevent loss of light.

### **Intelligently Linked Components**

The coded components of the Leica DM4 M and DM6 M ensure that all images you take are always calibrated for reproducible and reliable results. Intelligently linked with each other, you can change settings without having to manually adjust the calibration. This ensures faster operation, fewer errors, and reliable data.



# SOPHISTICATED FEATURES FOR A SMOOTH WORKFLOW

Your microscope is part of a complex workflow. Delivering high quality images is key, as well as speed, accuracy, and ease of use. The Leica DM4 M and DM6 M offer a range of intelligent features that make microscopy easy, reliable, and efficient.



## Easy Focusing on Reflective Surfaces

Reflective, polished, and unstructured surfaces like bare wafers or aluminum are difficult to focus. Leica's focus finder helps you to image these samples with ease and focus on the surface without the risk of damaging the sample or objective.

## Keep the Big Picture with the Panorama Objective

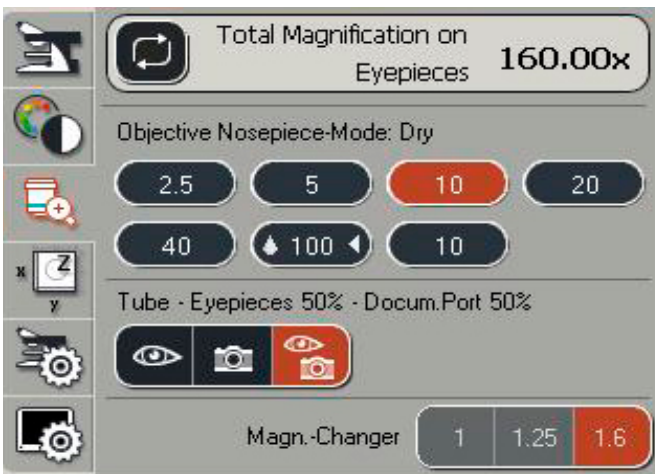
The 1.25x panorama objective gives you a fast overview of the sample surface. In combination with the reflected light axis, this objective provides excellent depth of field and the highest degree of illumination homogeneity for low magnification imaging.





### One Button to Reveal Microtopography with DIC

Choose DIC (Differential Interference Contrast) with just one click. The analyzer, polarizer, and appropriate prism for the objective in use automatically move into the optical path and highlight even the smallest scratches or defects and any type of microtopography. The Leica DM4 M and DM6 M reliably adjust illumination intensity, aperture, and field stop. This helps to avoid mistakes.



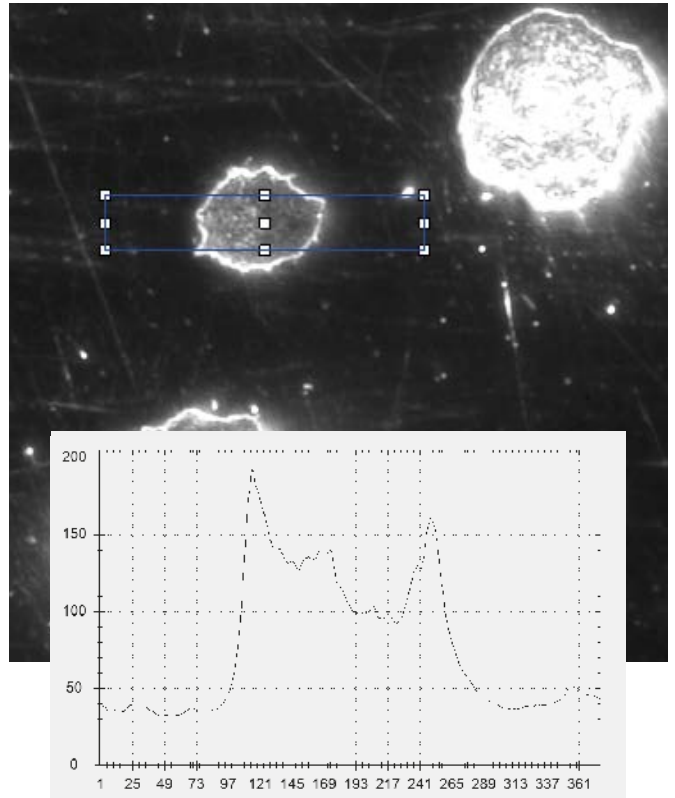
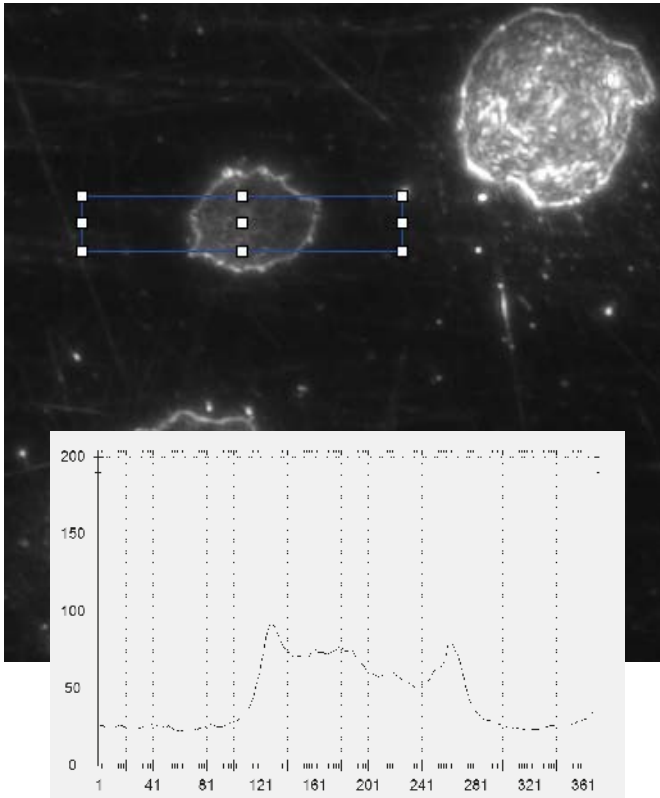
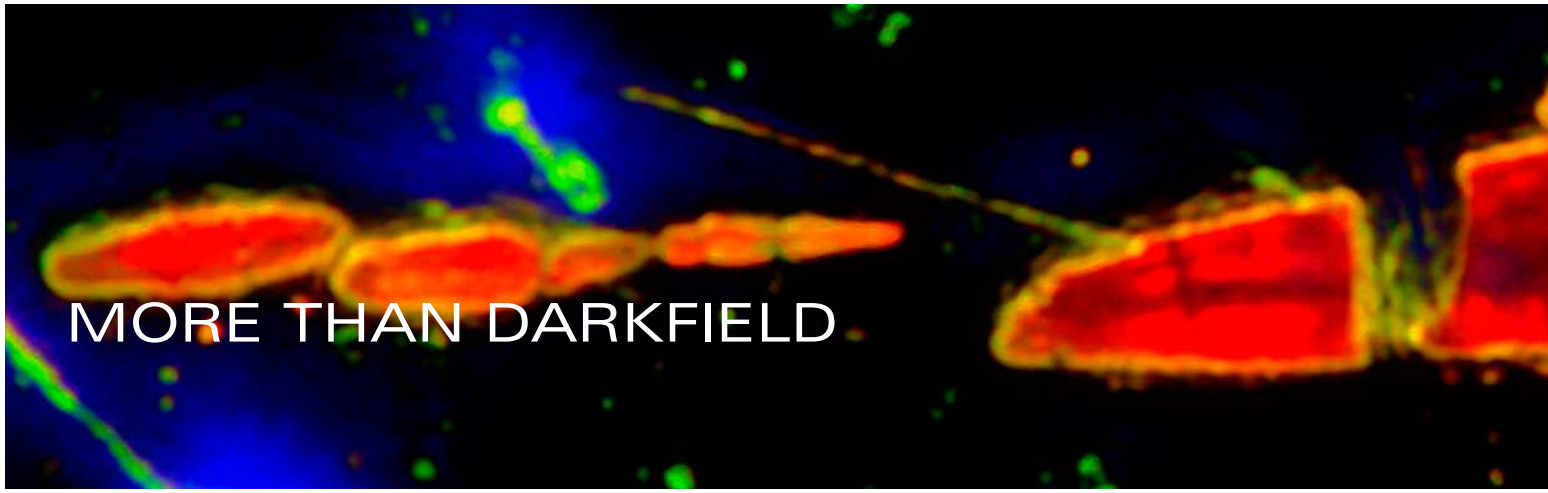
### All Settings at a Glance

One look at the clearly-arranged display of the Leica DM4 M and you see all current settings of your microscope and camera. The Leica DM6 M features a high-resolution touchscreen, which serves as a control unit for all motorized and coded functions. Being user-friendly and intuitive, it reduces training time with clear, easy-to-follow controls and instrument status information.



### Individual Functions Benefit Your Workflow

The Leica DM4 M and DM6 M feature dedicated function keys for functions you use most. For example, program the macro mode for a quick overview, 10x Brightfield (BF) for a detailed view, 20x Darkfield (HDF) for High Definition Darkfield, and reserve one button to activate the documentation camera. Customized function keys help to speed up your workflow.

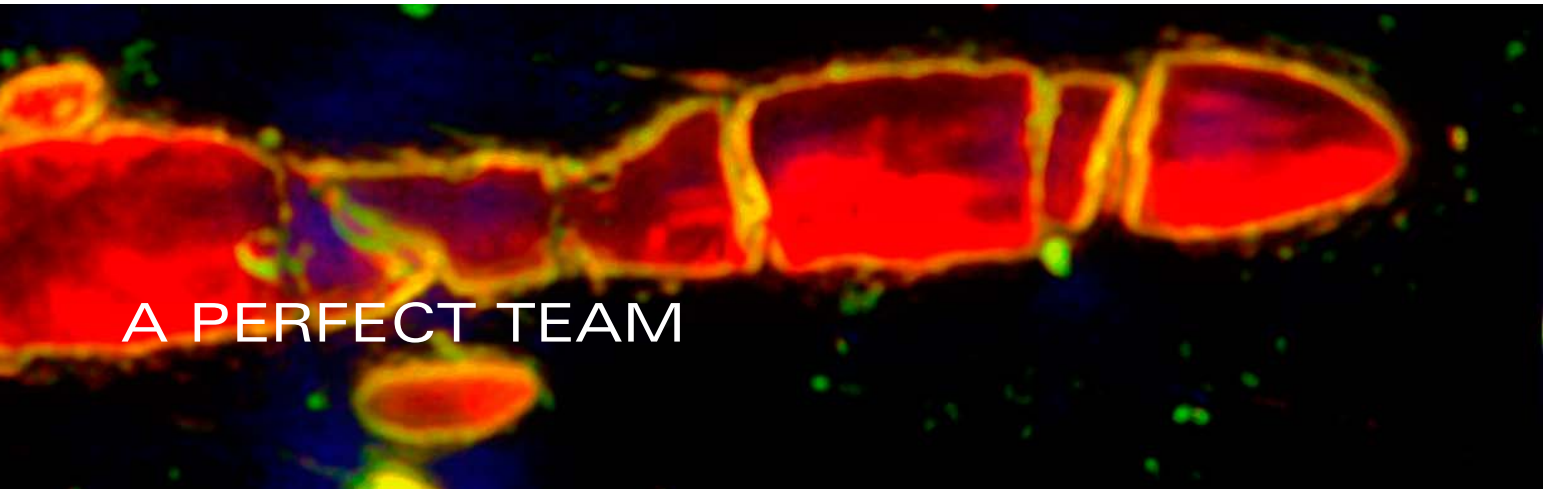


### Reveal Hidden Details with High-definition Darkfield (HDF)

Darkfield illumination is an essential contrast method in many industrial applications: It locates and highlights defects in dark recesses of your sample. In metallography, darkfield illumination allows you to judge the quality of a polishing procedure as it highlights scratches. For microelectronic applications it offers a completely different image that makes it easier to detect defects. Now, the new High-definition Darkfield HDF by Leica Microsystems delivers even more contrast and makes the finest structures visible. Compared with conventional darkfield objectives, the working distance has increased significantly. This protects the sample and the front lens, and hence your investment.





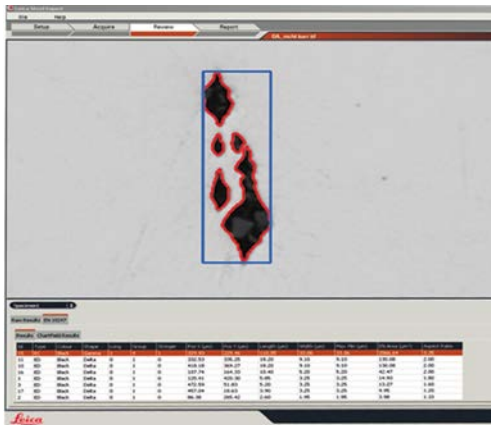


# A PERFECT TEAM



## The Modular System of Software, Microscope, and Camera

Select your personal image analysis system that best matches your laboratory's unique requirements. The Leica Application Suite (LAS) software platform integrates the microscope, software, and camera to smoothly interact in perfect harmony. LAS combines powerful features of microscope hardware and software into one package, focusing on efficiency in every aspect of the interface, functionality, and workflow.



## Software with Expert Knowledge

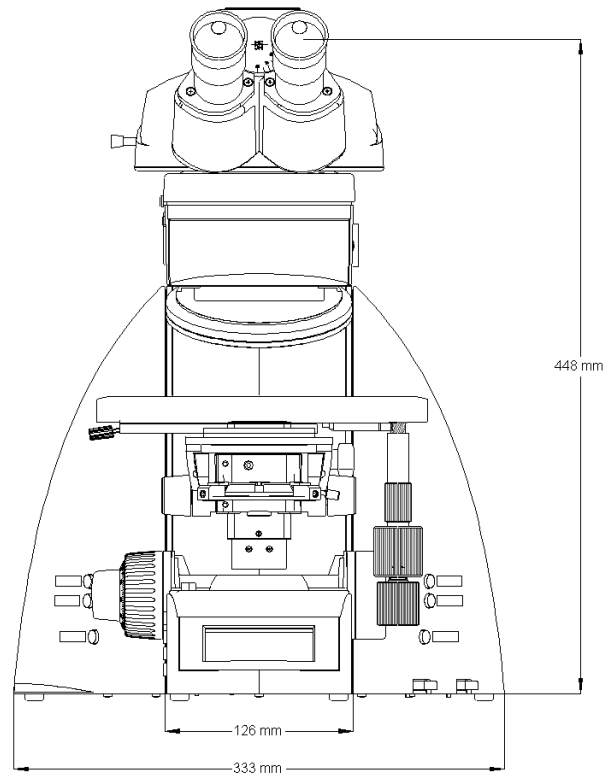
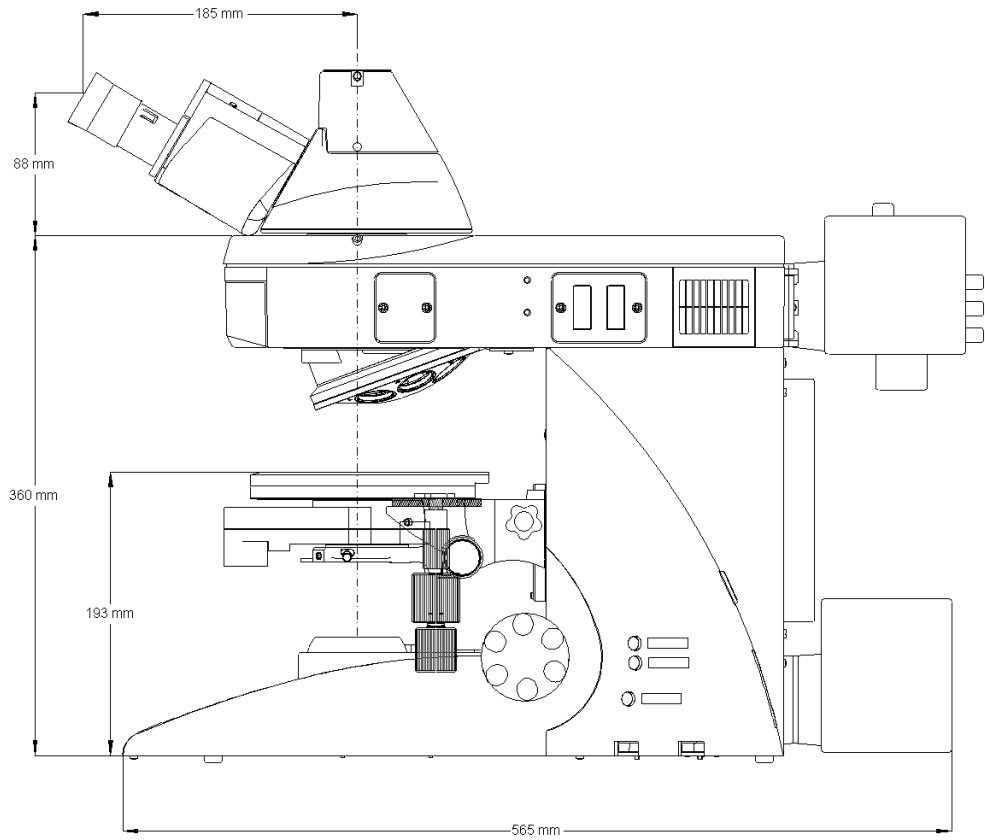
Use the Leica Steel Expert Module to precisely rate steel inclusions corresponding to international standards. Or take advantage of the Leica Cleanliness Expert Module for automated particle analysis in horizontal and vertical dimensions together with additional information such as metallic vs. non-metallic. Leica Phase Expert supports you in precisely measuring multi-phase microstructures, while Leica Grain Expert offers a comprehensive selection of grain size analysis techniques for materials research and metallurgy.



## Create Your Microscope for Today and Tomorrow

The modular concept of the Leica DM4 M and DM6 M allows you to create the microscope that suits your current task, and to easily upgrade later for future tasks. Select the solution that fits your budget and application needs now. And know that you can later add the features needed for future challenges.

# SPECIFICATIONS



SYSTEM OVERVIEW		Leica DM4 M	Leica DM6 M
<b>Stand</b>	<b>Power supply</b>	integrated within stand	within electronics box CTR6 or CTR6 LED
	<b>Display</b>	information display	Leica SmartTouch with information and controls
	<b>Interfaces</b>	1 x USB 2.0, 1 x I2C	2 x USB 2.0, 2 x I2C
	<b>Operation</b>	<b>Focus</b>	mechanical
		2-ratio gearbox (coarse/fine)	motorized
			5 electronic ratios
			includes parfocal function
			switch between coarse and fine mode
			memory locations for two z-positions
	<b>Objective turret</b>	absolute coded	motorized
		– 6x M32 thread	includes dry and immersion mode
		– 7x M25 thread (optional)	6x M32 thread, 7x M25 thread (optional)
	<b>Stage</b>	mechanical	motorized (optional)
		ceramic-coated	with stepper motor
		y-drive with belt	switch between fast and precision mode
		removable stage drive with adjustable torque	includes memory location for up to
		110° swivel	5 stage positions
		left-handed version optionally available	mechanical
			ceramic-coated
			y-drive with belt
			removable stage drive with adjustable torque
			110° swivel
			left-handed version optionally available
	<b>Controls</b>	6 programmable function buttons	6 programmable function buttons
			SmartMove
			controls for z (focus) movement and x,y (stage) movement
			4 programmable function buttons
			Leica STP8000
			controls for z (coarse and fine focus) and x,y (stage) movement
			11 programmable function buttons
			touchpanel with information and control panels
	<b>Specimen overview tool</b>	No	Yes
<b>Transmitted light axis</b>	<b>Illumination</b>	LED	either 12 V 100 W halogen lamp or LED
	<b>Automation</b>		
	Light manager: automatic Köhler light management sets the best values for aperture, field diaphragm, and light intensity	Yes	Yes
	Contrast manager: switch from one contrast method to another with one push of a button	Yes	Yes
	Constant Color Intensity Control: maintains a constant color temperature (3200 K)	Not necessary for LED	Yes for Halogen versions Not necessary for LED
	<b>Contrast method</b>	BF, PH, DF, ICT, POL	BF, PH, DF, POL DIC (fully automatic)
<b>Incident light axis</b>	<b>Motorized filter cube turret</b>	4-fold and 5-fold	4-fold and 5-fold
	<b>Illumination</b>	LED lamphousing	LED lamphousing
		Halogen illumination with external power supply	Halogen illumination with external power supply
	<b>Automation</b>		
	Illumination Manager: Objective related setting of light intensity and aperture diaphragm	Yes	Yes
	Contrast manager: switch from one contrast method to another with one push of a button	Yes	Yes
	Round and square illuminated field diaphragms for ocular and camera observation (motorized)	Yes	Yes
<b>Condensers</b>	<b>Automation</b>	condenser head, motorized	condenser head, motorized
		7x condenser disk, motorized (optional)	7x condenser disk, motorized (optional)
		polarizer, motorized (optional)	polarizer, motorized (optional)

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