Axiovert 200

Unique Down to the Last Detail

Live cell imaging, micromanipulation on living cells – never before have such rigorous demands been placed on the stability, flexibility, reliability and operating comfort of microscopes. And never before has there been a microscope capable of meeting these demands with such ease and elegance. Its name: Axiovert 200, the state of the art in inverted microscopy from Zeiss.

Axiovert 200 is based on the extraordinary expertise and experience of a company which has been setting international standards in inverted microscopy since 1924. A company that developed the first microscope with infinity optics. But above all: this high-end microscope surpasses earlier models in every crucial detail: the outstanding Zeiss optics with the wide range of ICS objectives, with innovative condensers and optimized fluorescence as well as with an unusual degree of instrumental automation and adaptability options, exceptional stability and unique ergonomic design.

And Axiovert 200 M gives you the freedom to automate many routine procedures – so you save time with no loss in reliability.

As a matter of fact, Axiovert 200 is much more than the sum of its benefits, and why? Because it gives you a powerful basis in work and your life science applications more precisely, more rapidly and more successfully than before in other models. A basis on the best there ever was in the best, but that’s exactly what you need to be in science today.

For further details, please contact:

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AxioCam and Light Trap are trademarks of Carl Zeiss.

Light Microscopy

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Axiovert 200 ca. 24 kg (depending on model)
Axiovert 200 M ca. 40 kg incl. fluorescence

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As a matter of fact, Axiovert 200 is much more than the sum of its benefits. Just as quickly. Because it gives a crucial edge in speed and precision, it brings even the most intransigent demands to an end. Axiovert 200 allows you to achieve more rapidly and more accurately than before in other words, it gives you the best two shores poise in the best lift: that's exactly what you need for a science today.
Milestones

100 years of tradition and innovation in inverted microscopy – with developments that set the standards of their time. Now a new microscope from Carl Zeiss is continuing this success story: Axiovert 200, yet another milestone in research and routine.

1924 Large research microscope with the first “infinite” objectives in the world.
1934 Neophot – the microscope with the first darkfield and Köhler illumination.
1935 LU-stand – the first upright basic stand that could be converted into an inverted one.
1968 Telaval – movable stage, upright non-mirror image, microphotography with automatic exposure.
1973 Axiomat IDC – the start of inverted high-performance microscopy with its own “infinite” optics.
1973 Invertoskop D – for routine applications.
1976 IM and IM 35 – the first inverted microscopes for all contrasting methods, including reflected light fluorescence.
1987 The first Axiovert generation – worldwide the first with complete ICS optics (Infinity Color Corrected Optical System).
2000 Axiovert 200 – the beginning of a new era in inverted high-end microscopy.
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Axiovert 200 – The Optics
Limited Only by the Laws of Physics

Ever since Ernst Abbe and his famous formula, it is a known fact that resolution is determined by the numerical aperture of the objective and the condenser. Only when the quality and interaction of both components are 100% perfect – as with Axiovert 200 – is image quality optimal. ICS infinity optics: limited only by the laws of physics.

The Objectives: Excellent in Contrast

LD – long distance – objectives and LD condensers: The extra long working distance is especially important in inverted microscopy in order to penetrate thick vessels as easily as possible.

The LD A-Plan objectives have already been corrected for all standard 1 mm chamber thickness (+/- 0.4 mm), thereby yielding results that are strong in contrast and free of aberrations.

The New Condensers: Distinguished by Distance

More space for manipulation in microscopy: With N.A. 0.35 (WD 70 mm) and N.A. 0.55 (WD 26 mm), the new top LD condensers offer considerably more working distance – so important for easy handling of manipulators and rapid observation of the sample. But also more freedom in contrasting methods. The new LD condensers can be used in every area of application, thanks to their numerous modulators for Phase contrast, Varel or DIC. A new and highly interesting feature: DIC prisms can even be used with the condensers with an N.A. of 0.35. Convincing evidence of Axiovert 200’s impressive flexibility: A special adapter allows you to use the high-resolution condensers with N.A. of 0.8 and 1.4 from the family of upright microscopes.

The Observation Tubes: Flexibility in Focusing

Axiovert 200 meets all demands with three tubes:

1. Binocular tube. The integrated shutter prevents ambient light from entering the stand through the eyepiece during low light level image acquisition, thereby contributing stray light.

2. Phototube. Features TV port (60 mm interface) with 3 positions (vis/photo: 0/100, 100/0 and 50/50), shutters and additional focusing Bertrand lens for easy adjustment of the phase rings.

3. Height adjustable Ergotube with focusing Bertrand lens, shutter and an ergonomically ideal 25° viewing angle, with 50 mm range of travel. Now fatigue-free work for hours on end is no longer a problem.

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Optics to perfection.
For every method, Zeiss provides you with a wide range of ICS objectives.

The new LD condensers. Making sure that ICS optics provide full performance potential.

N.A.: 0.35 – WD 70 mm, for BF; Ph 0, 2, 3; DIC 1, 2; Sn 1
N.A.: 0.55 – WD 26 mm, for BF; Ph 1, 2, 3; DIC 1, 2; II, III; Sn 1, 2
N.A.: 0.8 – WD 7 mm, for BF; Ph 1, 2, 3; DIC 1, 2, 3; D 0.6, 0.8
N.A.: 1.4 – oil immersion, for BF; Ph 2, 3; DIC 1, 2, III; D 1.1, 1.2

(From top to bottom)
Binocular tube
Phototube
Ergotube
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**Axiovert 200 – The Contrasting Methods**

Quality and versatility: *Axiovert 200* is ready for every contrasting method. And consequently for the solution that works the best for your application and makes the most economic sense.

**Double the Benefit: Two Methods – One Objective**

A quick look at the range of Zeiss objectives is enough to convince you of the benefits they offer. The Varel objectives are a combination of phase contrast and Varel, thereby providing you with the unique possibility of imaging your specimens both three-dimensionally and in phase contrast. Depending on the application, you decide which method you would like – without changing the objective. The Zeiss *Variable Relief* contrast is so versatile that it can be used for all cells, no matter what type, no matter how thick. Additional flexibility that will considerably simplify your work.

A Powerful Program

**With or Without Sénarmont: The DIC Methods**

For the best Differential Interference Contrast (DIC) that you have ever seen, you must have the best components. Consequently for every objective there is a DIC slider, positioned in the objective turret, which matches it optimally. There is also the corresponding prism, which is found in the condenser turret. You have the choice of two methods. First: DIC according to Nomarski. Here polarizer and analyzer are at right angles to each other and contrast is achieved by adjusting the DIC slider. Second: DIC with Sénarmont. Instead of a DIC slider, a revolving analyzer with \( \lambda/4 \) plate is used to attain contrast. The advantage of the second method – considerably increased accessibility – is particularly evident in the case of larger, lateral setups with cameras and manipulators. Moreover, once the small DIC sliders have been centered, they no longer have to be adjusted.
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Axiovert 200 offers yet more performance, intensity and homogeneity when it comes to fluorescence. It offers innovative ideas and intelligent details which, taken together, provide even higher quality imaging as well as easier and faster handling.

The new 5x reflector turret with Push&Click filter sets

Easily adjustable:
HBO illuminator with lateral adjusting aid

Human endothelial cells, 4fold fluorescent labeling, J. Zbären, Inselspital Bern, Switzerland

Light trap:
less stray light, more contrast

AttoArc 2
regulates intensity of HBO illuminator

Soft Click:
Giving Smoothness a New Twist

With Axiovert, rotating the reflector turret by one or more positions is so exceptionally smooth that it has earned a name of its own: Axiovert 200 Soft Click. As a result, you have vibration-free micromanipulation and no capillary breakage.

Signaling Quality:
The Light Trap

Much more contrast with much less stray light. In other words: the best signal-to-noise ratio you’ll ever find. The patented Zeiss Light Trap makes this possible by minimizing interfering stray light – and in the process providing Axiovert 200 with unprecedented brilliance in fluorescence images.

Just Push&Click:
Fluorescence to the Power of Five

Five filter sets with full 23 mm field of view – the Axiovert 200 reflector turret offers you more flexibility and easier handling. The filter sets can be switched within seconds – just push&click.

And if you want even more: A motorized 8x excitation filter is available for Axiovert 200 M.

Greater Versatility:
The New HBO Illuminator with AttoArc 2

With the new AttoArc 2 you have continuous brightness control of the HBO illuminator – directly from your PC via microscope software. And there is yet another practical innovation: The burner can be quickly and simply aligned with the adjusting aid and lateral adjusting screws of the new HBO illuminator.
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The superb fluorescence of Axiovert 200 provides you with sharp contrast and unprecedented image quality. It also provides you with numerous practical features that you will quickly appreciate in your daily work.

Flexibility Means Freedom: The Reflector Turret

Axiovert 200 M allows you to change filter sets at the press of a button or by rotating them manually. It just depends on whether you decide in favor of a manual or motorized reflector turret. And should five reflector modules not be enough, you can easily switch the manual reflector turret – either from the right or from the left, whatever works best for your experiment. A flexibility that is synonymous with freedom, especially in the case of large setups with micromanipulators. Proof yet again of the meticulous attention that Axiovert 200 pays to those vital details.

Practical and Pragmatic: The Sliders and Diaphragms

Optimal and proper Köhler illumination, even in fluorescence. This is achieved through centerable aperture and luminous field diaphragms, which are available as sliders and can easily be attached to the stand from the side. A further advantage: the accessibility of these diaphragm planes. Ideal when you want to use slit diaphragms or pinhole diaphragms in special applications.

Speed with Safety: The Shutter

The standard electrical shutter in the FL beampath guarantees that fluorescent dyes and samples will never fade. At the press of a button on the front of the stand, the shutter opens and closes the beampath quickly and safely.

Well Managed: The Light Manager

Press a button and the halogen illuminator is easily switched on or off. With a special soft-start function to protect the lamp – and your eyes! Through simple storing, the Light Manager makes it possible to use transmitted light and incident light either separately or simultaneously. Even the manual version of Axiovert 200 offers this useful feature. The Light Manager in Axiovert 200 M offers you much more: for example, storing of the illuminator intensity depending on the Optovar used. Or it offers you contrasting methods with a motorized condenser – depending on the objective used.
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Endothelial cells, J. Zbären, Inselspital, Bern

Axiovert 200 – The New Fluorescence

The epi-fluorescence beam path is optimized for highest transmission over a wide spectral range – from UV to IR.

Aperture and luminous field diaphragm slider, filter slider

Ergonomic operation of electric shutter

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Highlights in Easy Handling

Endothelial cells, J. Zbären, Inselspital, Bern, Switzerland

Duodenum (rat), J. Zbären, Inselspital, Bern

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Axiovert 200 – The Interfaces Ready for Your Goals

Almost unlimited possibilities – both for documentation and for manipulation. For the documentation of your work alone, Axiovert 200 provides you with six camera interfaces – including dual video adapter. All controls are conveniently arranged close to the front of the stand. This means: Switching between single ports and varying ratios is easy. And you decide which step is the right one for your application.

Diverse: The Optical Interfaces

Sideport left: With two or even three positions for varying ratios.
Sideport right: With three positions for varying ratios. The same applies to the additional sideport left.
Frontport. The frontport offers you two adapters to connect a digital and a video camera or an SLR camera.
Baseport. The ideal interface for extensive experimental setups, especially for the simultaneous use of cameras and manipulators. And ideal, if transmission should be as high as possible.

Dual Video Adapter. The adapter for simultaneous imaging with two cameras. Integrated Push&Click filter sets for individual beam splitting. Precisely: one TV port is adjustable in x, y and z direction.

Everything is Possible: Interfaces for the Manipulators

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The Dual Video Adapter: For simultaneous documentation with two cameras.

2-cell mouse embryos, DIC, D.L. Keefe, MBL, Woods Hole, USA
Injection in Blastocysts, DIC, K. Vintersten, S. Gray, EMBL, Heidelberg, Germany

Control elements for TV ports:
- manual stand
- motorized stand

Possibilities for mechanical adaptation
The success of your work depends on easy and fatigue-free operation of a microscope. And through its new ergonomics, **Axiovert 200** helps ensure your success. With benefits that are literally within your grasp: the convenient, easy-to-use arrangement of the controls and the smooth and rapid switching functions. And, of course, with careful attention paid to important details.

All in all, **Axiovert 200** offers you a wealth of sophisticated ergonomic benefits you will appreciate after a long day’s work.

## Help in Sight: The Optical Components

Now true help with your work is finally in sight: The analyzer slider with Sénarmont, easily accessible and operable from both sides, guarantees rapid contrast adjustment. The Light Manager, which stores lamp intensities, makes it even easier for you to carry out your work.

## From Ergotube to Object Guide: The Mechanical Components

Individually adjusted to every height – the Ergotube is continuously adjustable. Maintaining all the while a convenient 25° viewing angle. There are other impressive examples of how **Axiovert 200** meets individual needs. It doesn’t matter, for example, if you are right-handed or left-handed: The object guide can be located either on the right or the left of the stage. And the focus stop guarantees that the objective turret automatically stops before the objective touches the sample.

## Everything Easily Under Control: The Electric Components

All controls directly near the focusing drive – whether the toggle for lamp intensity, electric shutter for fluorescence light path, buttons for the halogen lamp (on/off), tube lens or sideport turret and baseport slider. So that you have everything easily under control.

## Everything at a Glance: The LCD Display

Just one quick look is enough: the LCD display shows you the current status of the microscope adjustments – whether it’s magnification, lamp intensity, shutter position or the z measuring function to determine specimen thickness. At a glance everything you need to carry out your work rapidly and precisely.

## Powerful Protection: Aqua Stop

The idea is simple, the performance powerful: Aqua Stop, the latest Zeiss innovation. It protects objectives and stands from any liquids that have been spilled. Through a triple protection system. First, through the silicon sealing directly on the objective. Second, through a silicon coating that covers the entire objective turret. And third, through a container placed under the objective turret. Two tubes leading to it channel the liquid away from the microscope. And best of all: Even with Aqua Stop the objective turret remains completely rotary.
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1) height adjustable Ergotube
2) Just push a button – Switching between fluorescence and brightfield
3) One touch – focusing and turning the reflexion turret
4) One turn – easy adjusting of DIC contrast with the Sénarmont analyzer
Axiovert 200 M
Motorized Top Performance

In its manual version Axiovert 200 already makes your work a lot easier. But if you want to exploit its full potential, then you need Axiovert 200 M, the fully motorized version. Due to its modular construction it is upgradable at any time according to your needs and budget with a motorized condenser or a motorized reflector turret. All the motorized functions are controlled either by buttons on the stand itself – or via the RS232 interface with PC and corresponding software, for example, AxioVisionControl.

The Best in Live Cell Imaging:
Motorization times 8

Simplifies and speeds up complex operations: With up to eight coded and fully motorized components, Axiovert 200 M provides the best conditions for the automation of live cell imaging applications:

- Automatic adjustment of objective and reflector turret
- Automatic setting of previously selected diaphragms and brightness levels via Light Manager
- Choice of five documentation ports via the Electronic Port System (EPS)
- Secondary 1.6x and 2.5x magnification through motorized Optovar system
- Pushbutton controlled fluorescence and halogen lamp shutters
- Z focus with the high-precision Harmonic Drive DC motor for scanning Z specimens with minimum step size of 25 nm, ideal for deconvolution, 6-D imaging and confocal microscopy with LSM 510 and LSM 5 Pascal
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- Pushbutton controlled fluorescence and halogen lamp shutters
- Z focus with the high-precision Harmonic Drive DC motor for scanning 2 specimens with minimum step size of 25 nm, ideal for deconvolution, 6-D imaging and confocal microscopy with LSM 510 and LSM 5 Pascal
The Stages
The Basis for Your Research

The right stage for every application, the right mounting frame for every specimen – Carl Zeiss has a broad spectrum of accessories precisely matched to the microscope and satisfying your most critical requirements.

The Specimen Stage
With attachable object guide (right- or left-hand) the ideal solution for many applications.

The Mechanical Stage
Latest version of a successful concept: with plane surface, plus the extra-long travels and utmost precision required for multi-well plates.

The Gliding Stage
The top plate with your specimen can be sensitively shifted in any direction as well as rotated. The optimum solution for specimen positioning prior to micromanipulation and for chromosome microdissection.

The Motorized Scanning Stage
PC- or joystick-controlled, this stage allows highly precise positioning of specimen details. Software modules such as Mark&Find in AxioVision handle the saving and retrieving of positions.

With any stage you can select from a wide variety of mounting frames for specimen slides, Petri dishes and vessels of various shapes. Universal mounting frames are specially recommended for their versatility. For outstanding precision, choose:
- M for the plain stage,
- K for the mechanical stage,
- MX or KX for multi-well plates.

Temperature Control and Incubation
The Right Climate

Whether your specimen needs heating or cooling – Carl Zeiss has the facilities to optimize the environment for any experimental setup: Special heating and temperature controlled stages. Or, for upgrading a plain or mechanical stage: heatable and temperature controlled mounting frames are available.

The Carl Zeiss heating stage generates heat through transistor heat loss – without interfering electric fields. This is ideal for electrophysiology. In addition, the stage has ducts which direct a heated air blast under the specimen, right where it is needed.

An alternative way of temperature control is heat flow past the specimen within an incubator. This way, a temperature gradient cannot build up in the first place. The heating effect is supplemented by objective heaters which attach to immersion objectives. The heat is transmitted through the immersion oil right up to the specimen.

In addition to the right temperature, constant pH is essential for optimum cell observation. This is ensured by incubation with CO₂. Choose from the Carl Zeiss incubators shown on the right.
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We all know that microscopy today could not exist without the support of computers – and that many applications would not even be feasible. Carl Zeiss has developed a tailor-made package of solutions comprising software with flexible modular components and a digital camera. In combination with the inverted high-end Axiovert 200 microscope, this package provides you with the best basis for successful work in microscopy today.

All the motorized functions of your microscope perfectly controlled: Through its exceptional user-friendliness, AxioVisionControl is ideal for multi-user operations. Storing and recalling parameters for reproducible re-use, selection of contrasting methods, reflector cubes, objectives or complete adjustments – these are only a few of the operations that AxioVisionControl takes over for you. Fast and easy at the press of a button.

**Digital Top Performance: AxioVision**

Convenient controls and precise image processing – that’s what AxioVision, the digital imaging system from Carl Zeiss, offers you. From image acquisition, processing, annotation and archiving, to automatic storage and retention of magnification factors or scale display when changing objectives right up to reports. Since its main window is divided into two areas, one for working and the other for documentation, AxioVision provides both easy-to-operate controls and optimal adaptation to individual applications. Moreover, it is possible to add on other helpful features. Additional modules provide you with even more possibilities to process and analyze images.

**AxioCam:**

**The High-end Camera for a High-end Microscope**

Perfect for every single one of your applications – the highly sensitive digital camera AxioCam enables you to exploit the full resolution capacity of Axiovert 200. With ultrahigh resolution up to 3900 x 3090 pixels in real color and high dynamics for high-quality fluorescence (14 bits per color channel), the cooled camera generates needle-sharp, color-fast images in all image formats. Even extremely fine structures are reproduced without color moiré. AxioCam is pleasantly easy to use. It works without an external control box and is absolutely vibration-free. With approximately 20 images per second on your monitor, the live mode is very rapid. You can focus precisely (in color!), look for the right place in the specimen and check exposure time. AxioCam, a real multitalent and an outstanding member of the Axiovert 200 team. Available as AxioCam color, the superbly flexible color camera for transmitted light and fluorescence applications with high resolution. Or as AxioCam black&white with extra high sensitivity for such fluorescence applications as FISH or deconvolution.

**Optimal Fluorescence: Deconvolution from Carl Zeiss**

You are only too well familiar with this problem in fluorescence microscopy: stray light from above and below the focal plane. Your image is over-exposed – to the extent that in the worst of cases you no longer recognize any structures. The powerful software solution from Carl Zeiss can calculate the interfering stray light right back to the point of origin. As a consequence, the distorted structure “straightens out”. With the help of Z-stack modules and 3-D deconvolution, AxioVision takes care of everything. First, the control and regulation of microscope and camera in capturing the Z-stacks. Second, calculating the degree of distortion (PSF – Point Spread Function). Third, the deconvolution method. The result is significant increases in contrast and sharper, clearer images. Fast and easy.
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Hela cells in phase contrast and GFP fluorescence (Golgi markings). Dissociation of Golgi apparatus according to Brefeldin A Zugabe.

Dr. Pepperkok,
EMBL Heidelberg, Germany

Central control of the most important adjustments for multidimensional imaging

All in One:
The Functions
Documenting dynamic processes with time-lapse, multi-channel, z-stack and Mark&Find in freely selectable combinations – Cell Observer offers you everything in one system. Including such practical features as the possibility to alter all parameters even while recording through “Pause” and “Continue” functions. Or measuring the distance from A to B, calculating the angle between A, B and C, statistics and much, much more. In a nutshell: All the features that you expect and need in modern live cell imaging.

Focus on Perfect Teamwork:
The Components
Cell Observer is the first powerful, complete and homogeneous live cell imaging system. A combination of perfectly matched components, designed to meet all demands. The system consists of: a Zeiss microscope, the Zeiss digital camera AxioCam, the Zeiss software system AxioVision as well as Zeiss accessories such as xy-stages, filter wheels, shutters, incubators and culture chambers.

New Dimensions: The Performance
When you go beyond the second and third dimensions, you see with striking clarity the new dimensions in performance that Cell Observer offers you. The information found in the fourth wavelength dimension can be stored in 8 different channels of the image and freely combined at any time. The fifth time dimension describes the recording of cells during a defined period of time. In the sixth dimension various positions are automatically brought into focus on the culture plate. Whether you’re working in 2-D or in high-end 6-D imaging, with 6 images or 600: Cell Observer enables you to experience totally new dimensions in live cell imaging.

Cell Observer: The Applications

Transmitted Light
- Observation over time
- Observation over time with interruptions and manipulation
- Observation over time with motorized xy-stage
- Observation over time of dynamic processes
- Observation over time 2-stack

Fluorescence
- Observation over time in up to 8 channels (fluorescence or transmitted light)
- Observation over time in up to 8 channels with interruptions and manipulation
- Observation over time in up to 8 channels with motorized xy-stage
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Axiovert 200 M –
Laser Scanning Microscopy
See More, Recognize More

To give you an edge in your biomedical research, use the Axiovert 200 top-of-the-line research microscope as part of your confocal system. The optics and mechanics of the Axiovert 200 have been designed to integrate effortlessly into the Zeiss LSM 510 confocal microscope and its “little brother” the LSM 5 PASCAL. For outstanding resolution in all dimensions, LSM 510 and LSM 5 PASCAL are your ideal partners. Their powerful performance is still unequalled.

Growing with Your Requirements:
The LSM Family

The LSM 5 PASCAL is an ideal entry-level confocal microscope – a powerful but budget-priced system that sets new standards in its class. The LSM 5 PASCAL is the microscope of choice when you need a wide spectrum of fluorescence applications, including DIC contrast images. And its “big brother”, the powerful Zeiss LSM 510, offers even more possibilities. With up to four fluorescence channels simultaneously, and a wide choice of lasers to excite dyes in the UV and VIS range, LSM 510 NLO is perfect for the long-term observation of cells, tissues and embryos. Its multiphoton technology guarantees excellent imaging even with thicker samples. And its high 3-D selectivity enables you to conduct bleaching experiments such as FRAP and uncaging locally in addition to flexible image acquisition.

Efficient and Easy on the Sample:
Flexibility of Application

No other LSM system offers you so many different scanning methods: scan along a freehand drawn line, complete 360° image rotation, zoom and offset. In addition you have standard and special modes such as spline scan or Real Region of Interest (ROI) scan. Even complex time series can easily be defined and captured – with special attention paid to careful handling of your samples. All processes can be recorded and stored as digital movies. Thanks to the multitracking features these LSM systems offer, you can acquire multi-channel fluorescence images without channel crosstalk. All of this underscores the philosophy behind Zeiss LSM technology: noise-free images with a minimum of effort.

Intelligent Features:
The Intuitive Software

The sophisticated and continually expanding LSM software can do far more than record brilliant images. Measurement functions are available to evaluate your data while an entire series of different 3-D and 4-D visualization features provide you with totally new insights into the structure of your samples. Numerous online and offline evaluation features analyze time series. The extremely user-friendly LSM image database stores not only image data but also all relevant parameters, including your notes. And because the system is completely motorized, reproducing an experiment under identical conditions is only a mouse click away. This makes the work significantly easier and saves more than just time.

Molecular Interactions
Efficiently Analyzed:
ConfoCor 2

Universal for solutions, unbeatble for cells: with the LSM 510 you can localize marked molecules. Using fluorescence correlation spectroscopy (FCS), ConfoCor 2 helps you to understand the interactions between these molecules. The measuring volume is, smaller than an E. coli bacterium and fits in every cell. As a result, biochemical processes can be examined in their natural environment. Of course, you can also use ConfoCor 2 for measurements in solutions.
Axiovert 200 M – Laser Scanning Microscopy
See More, Recognize More

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Axiovert 200 –
A Partnership for the Future

Ideally Suited for the Perfect Handshake:
Zeiss Partners

Whenever you need special software for your applications, remember: Your partners are our partners. Axiovert 200’s open architecture makes it easy for you to effortlessly link software packages from other suppliers. Which of course makes Axiovert 200 the ideal platform for a wide range of special application driven software in many areas of research.

That Extra Plus in Performance:
Zeiss Service

The decision you make for a microscope, one equipped with the components you need, is as complex as the requirements it must meet. A skilled team of consultants will help you with making the right choice and with budget planning. And all of our consultants possess impressive know-how and experience as well as extensive knowledge of the entire microscope market. Thus you benefit from much more than our skill in developing microscopes. You will be able to draw upon the enormous wealth of experience that Zeiss has accumulated in decades of practice in research and routine. You will profit from concrete assistance in your microscopy methods – and above all from innovative methods which will enable you to make great progress in your work. As a matter of fact, you often can’t really appreciate the full range of Zeiss service until after you have made your purchase – in practice, which is what counts. Our local consultants and technicians and the Carl Zeiss customer service all support you in your research with technical and applications aid, whenever you need it. Fast and reliably. Moreover, Carl Zeiss training courses and workshops provide you with added insights into practical areas of microscopy and imaging techniques. In fact, when you add together all the services and support that you get with Axiovert 200, you’ll see that it is more than a high-power microscope. Axiovert 200 is your ticket to a powerhouse of knowledge in microscopy that has been built up over the past 150 years.

Convincing from A – Z

Accessible the diaphragm planes
Complete system solutions from a single source
Confocal with LSM 510
Contrast-enhancing the Light Trap
Convenient the Light Manager
Customized the modular system
Digital AxioVisionControl software
Easy to use the Push&Click filter cubes
Efficient the motorized features
Ergonomic the Ergotube
Flexible the Dual Video Adapter
Generous the working distances of the LD Condensers
Highly resolved DIC (even with Sénarmont)
Ideal the documentation ports
Individual the function buttons
Informativ the LCD display
N-dimensional the modular Cell Observer
Open-end the system architecture
Optimal the stages and incubators
Powerful the ICS optics
Precise the Harmonic Drive motor
Retractable systems for micromanipulation
Sturdy the mechanics
Versatile 5 filter positions with 23 mm field of view
Vibration-free the SoftStop function
Water-proof the Aqua Stop
Zappy the electric shutter
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**Technical Data**

**Compare and Decide**

<table>
<thead>
<tr>
<th>Axiovert 200</th>
<th>Axiovert 200 M</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microscope stand</strong></td>
<td>Highly stable pyramid shape and low center of gravity for vibration-free work, min. 8 adaptation options (18 drilled holes) e.g. for micromanipulators</td>
</tr>
<tr>
<td>z-Focus</td>
<td>Harmonic Drive</td>
</tr>
<tr>
<td><strong>Optics</strong></td>
<td>ICS – Optics for best image quality</td>
</tr>
<tr>
<td></td>
<td>6x objective nosepiece for DIC, encoded</td>
</tr>
<tr>
<td><strong>DIC System</strong></td>
<td>Nomarski DIC – for every objective the optimal DIC slider, contrast adjustment optional with Sénarmont with an analyzer and rotary λ/4 plate</td>
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<tr>
<td><strong>Illumination</strong></td>
<td>Transmitted light 6 V, 30 W</td>
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<td></td>
<td>LCD display, Light Manager</td>
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<tr>
<td><strong>Epi-Fluorescence</strong></td>
<td>Filter slider 3 positions for filters with 25 mm diameter</td>
</tr>
<tr>
<td></td>
<td>Shutter, electric Fast and easy-to-use shutter on the front of the stand</td>
</tr>
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<td></td>
<td>Light Trap Best signal to noise ratio, very good contrast, minimised stray light</td>
</tr>
<tr>
<td></td>
<td>Adjusting aid Easy adjustment of the HBO burner</td>
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<tr>
<td><strong>Tubes</strong></td>
<td>Binocular tube With shutter to avoid stray light through overhead light</td>
</tr>
<tr>
<td></td>
<td>Ergotube With shutter and focusing Bertrand optics for easy adjustment of Ph apertures</td>
</tr>
<tr>
<td><strong>Eyepieces</strong></td>
<td>PL 10x/23 23 mm field of view. Budget model, sufficient if mainly cameras are used for observation</td>
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<td></td>
<td>23 mm field of view. For high-quality observation</td>
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<tr>
<td><strong>Stages</strong></td>
<td>Specimen stage (250x230 mm) With object guide for right and left, travel range: 130 x 85 mm with assorted frames</td>
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<td></td>
<td>Sliding stage (Z) For precise and free positioning, especially in micromanipulation (e.g. for transgenic techniques)</td>
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<td><strong>Compare and Decide</strong></td>
</tr>
<tr>
<td><strong>Typos and errors:</strong></td>
<td><strong>Accuracy:</strong></td>
</tr>
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</table>
Axiovert 200 Axiovert 200 M

**Microscope stand**
Highly stable pyramid shape and low center of gravity for vibration-free work, min. 8 adaptation options (18 drilled holes) e.g. for micromanipulators.

**z-Focus**

**Optics**
ICS – Optics for best image quality. Special objectives with long working distance: LD A-Plan and LD Achromplan. 6x objective nosepiece for DIC, encoded 6x objective nosepiece for DIC, motorized.

**DIC System**
Nomarski DIC – for every objective the optimal DIC slider. Contrast adjustment optional with Sénarmont with an analyzer and rotary 1/4 plate.

**Illumination**
Transmitted light 6 V, 30 W. 12 V, 100 W with on/off switch on the front of the stand, Köhler illumination. LCD display, Light Manager.

**Epi-fluorescence**

**Tubes**
Binocular tube With shutter to avoid stray light through overhead light. Phototube With shutters and focusing Bertrand optics for easy adjustment of Ph apertures. Ergotube With shutters and focusing Bertrand optics for easy adjustment of Ph apertures.

**Eyepieces**
PL 10x/23 23 mm field of view. Budget model, sufficient if mainly cameras are used for observation. E-PL 10x/23 23 mm field of view. For high-quality observation. N.A. 0.35 W.D.* = 70 mm. For BF, Ph0, Ph1, Ph2, DIC. N.A. 0.35 W.D.* = 70 mm. For BF/DIC, Ph0, Ph1, Ph2, DIC, manual. N.A. 0.55 W.D.* = 26 mm. For BF, Ph1, Ph2, Ph3, DIC, DIC, motorized. N.A. 0.55 W.D.* = 26 mm. For BF/DIC, Ph0, Ph1, Ph2, Ph3, DIC, DIC, motorized. N.A. 0.8 W.D.* = 7 mm. For BF/DIC, Ph1, Ph2, Ph3, D. N.A. 1.4 Oil imm. For BF, Ph, DIC. Aqua Stop For protection of nosepiece from spilled liquids.

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Compare and Decide

<table>
<thead>
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<tr>
<td>Side port</td>
<td>Splitting:</td>
</tr>
<tr>
<td>2x left</td>
<td>100%vis:0%doc/20%vis:80%doc</td>
</tr>
<tr>
<td>3x left</td>
<td>100%vis:0%doc/50%doc/0%vis:100%doc</td>
</tr>
<tr>
<td>3x right</td>
<td>The same like Axiovert 200, but motorized</td>
</tr>
<tr>
<td>3x right + left</td>
<td>100%vis:0%doc/100%doc left/20%vis:80%doc right</td>
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**Condenser**
N.A. 0.35 W.D.* = 70 mm. For BF, Ph0, Ph1, Ph2, DIC. N.A. 0.35 W.D.* = 70 mm. For BF/DIC, Ph0, Ph1, Ph2, DIC, motorized. N.A. 0.55 W.D.* = 26 mm. For BF, Ph1, Ph2, Ph3, DIC, DIC, motorized. N.A. 0.55 W.D.* = 26 mm. For BF/DIC, Ph0, Ph1, Ph2, Ph3, DIC, DIC, motorized. N.A. 0.8 W.D.* = 7 mm. For BF/DIC, Ph1, Ph2, Ph3, D. N.A. 1.4 Oil imm. For BF, Ph, DIC. Aqua Stop For protection of nosepiece from spilled liquids.

| Specimen stage (250x230 mm) | With object guide for right and left, travel range: 130 x 85 mm with assorted frames. |
| Mechanical stage | Plane surface, large travel range: 130 x 85 mm with application-oriented specimen holders. |
| Sliding stage (2) | For precise and free positioning, especially in micromanipulation (e.g. for transgenic techniques). |
| Scanning stage, motorized | Travel range: 120 x 100 mm with specimen holders (like mechanical stage). |

*with working distance
Axiovert 200

Unique Down to the Last Detail

Live cell imaging, micromanipulation on living cells – never before have such rigorous demands been placed on the stability, flexibility, reliability and operating comfort of microscopes. And never before has there been a microscope capable of meeting these demands with such ease and elegance. Its name: Axiovert 200, the state of the art in inverted microscopy from Zeiss.

Axiovert 200 is based on the extraordinary expertise and experience of a company which has been setting international standards in inverted microscopy since 1924. A company that developed the first microscope with infinity optics. But above all: this high-end microscope surpasses earlier models in every crucial detail: the outstanding Zeiss optics with the wide range of ICS objectives, with innovative condensers and optimized fluorescence as well as with an unusual degree of control and documentation and superior optics, exceptional stability and unique ergonomic design.

And Axiovert 200 M gives you the freedom to automate many routine procedures – so you save time with no loss in reliability.

As a matter of fact, Axiovert 200 is much more than the sum of its benefits. Axiovert 200 is much more than simply a microscope which can, for instance, switch to confocal microscopy more rapidly and more seamlessly than before or in other words, a given you the best view in the best light. It's exactly what you need for a science today.

For further details, please contact:

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