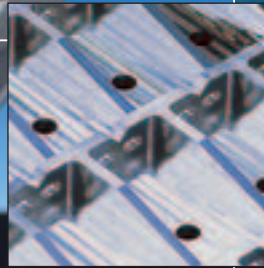


Axiovert 40 MAT

Versatile and Full of Power



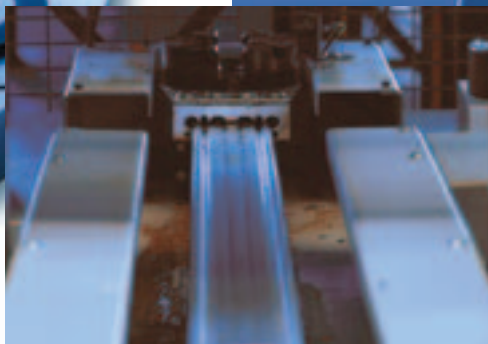
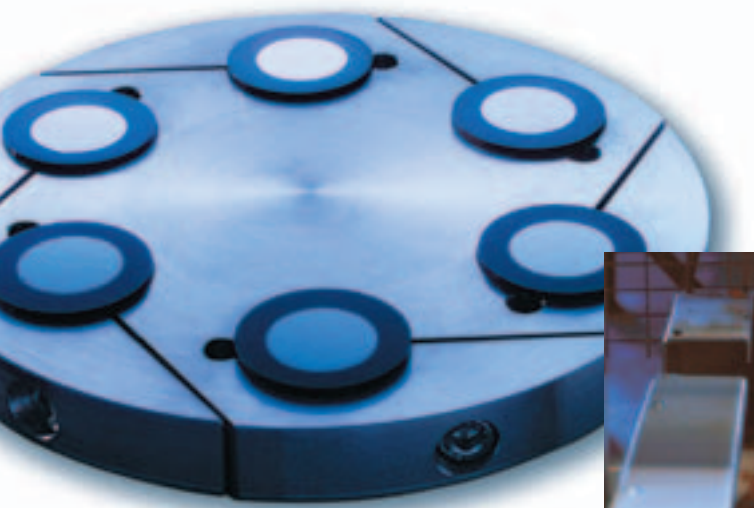
**The inverted materials microscope for
training courses and laboratory works**



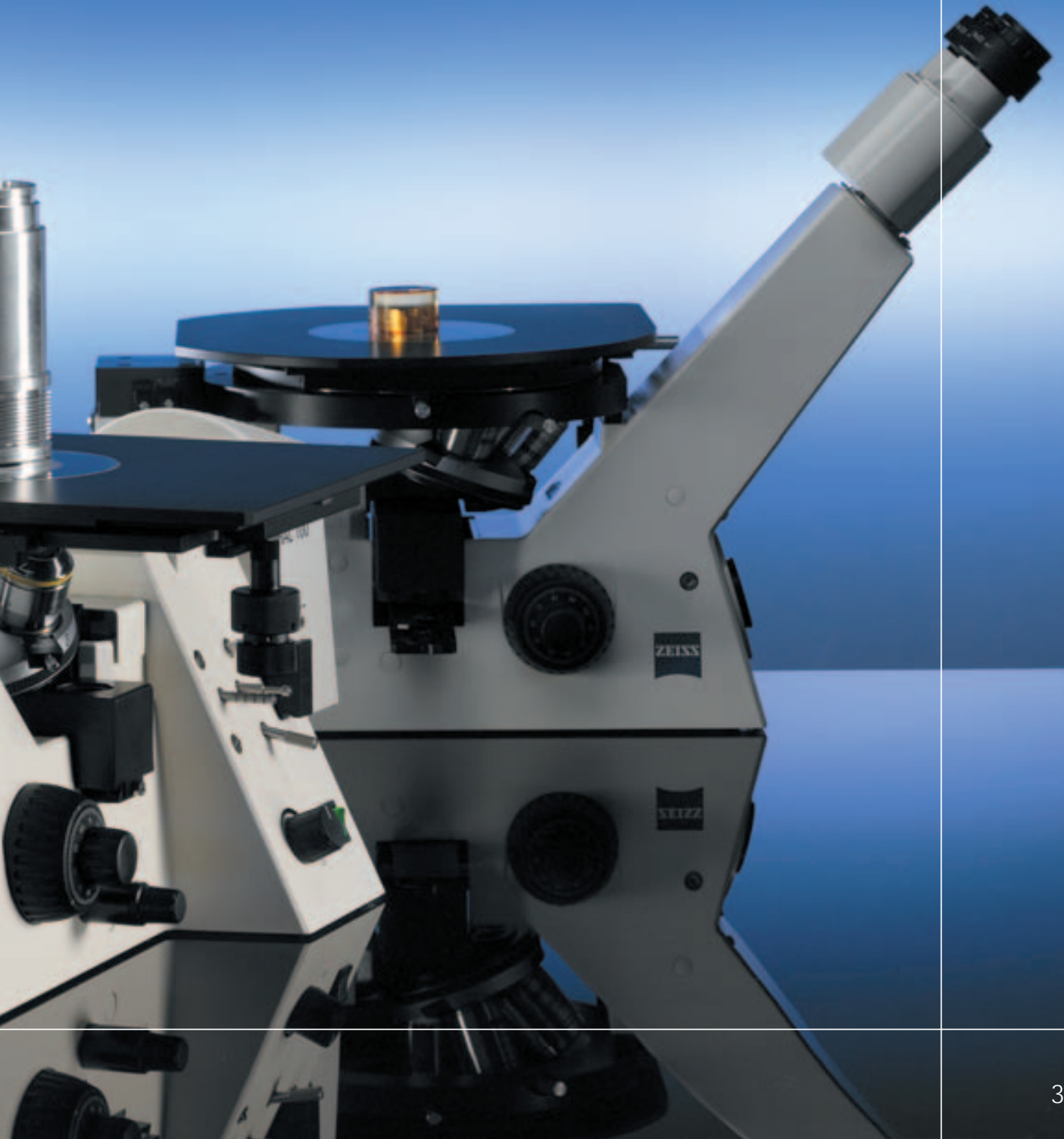
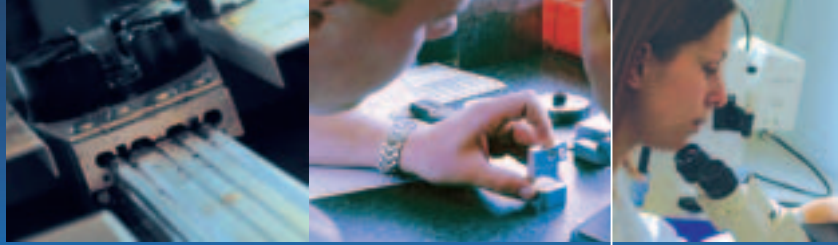
We make it visible.

In the Lead. The Flexible Solution for the Materials Laboratory.

Versatility combined with an exceptional design and stability, efficiency packed into a compact size, powerful performance and easy operation – these impressive features make the Axiovert 40 MAT the perfect solution to the exacting demands of a busy materials laboratory. Its superior optical performance is pure Carl Zeiss: a broad spectrum of outstanding contrasting techniques, upright laterally correct images, no need to prepare specimens with the metallurgical levelling press, modules and components tailor-made for a wide range of applications – in quality control and materials analysis, in the metal processing, building materials, glass and plastic industries as well as in research institutes or for training courses. The inverted design of Axiovert 40 MAT offers enviable advantages for materials microscopists. For example, freedom of manipulation with large, heavy specimens and additional safety for both specimens and objectives. Axiovert 40 MAT is precisely the microscope you need to meet the requirements of your materials laboratory. Powerful, flexible and cost-effective.



40 MAT



The Design. Perfect for Materials Laboratories.

You are well familiar with daily work in a materials lab: cramped working conditions, high specimen throughput, hours of sitting in one position. All of this places an enormous strain both on your body and your powers of concentration. Axiovert 40 MAT has been designed to make lab work as easy and safe as possible – thus increasing the efficiency of your workflow.

The Stand. A Solid Solution.

With its space-saving design and low stage height, the Axiovert 40 MAT is ideal for the demands of materials laboratories. Thanks to its low center of gravity, it is exceptionally sturdy and robust. A further advantage: This construction

permits the use of large and stable specimen stages and is consequently ideal for the examination of heavy and bulky specimens. In addition, the Axiovert 40 MAT is light in weight, making it easy to transport and store.

The Design. Top Precision for Daily Demanding Tasks.

The Axiovert 40 MAT makes no compromises when it comes to design and sturdiness. In fact, it has been specially designed to withstand the daily wear-and-tear placed on a materials microscope – for years to come. This means that even years from now you can both rely on outstanding image quality and be ensured that all controls are still working perfectly. Because that's what we strive for at Carl Zeiss: to provide you with cost-effective microscopy solutions that are an investment in your future.

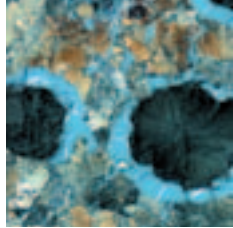
Precision is one of the major challenges in materials microscopy. Axiovert 40 MAT meets all necessary requirements – and, of course, all Carl Zeiss standards.



Quality control



Axiovert 40 MAT



Thanks to the 3-position reflector slider it's easy and fast to change contrasting techniques with the Axiovert 40 MAT. If necessary, additional reflector modules can simply be exchanged.

Operation. Simply Smooth and Easy.

Controls must be easy to use – and easy to find. So it's only logical that the Axiovert 40 MAT is based on ergonomic principles that include intuitive arrangement of the controls as well as optimal stage height and tube design. Additional sophisticated features such as the Push&Click modules and adaptable transmitted light are yet another guarantee for smooth and easy operation.

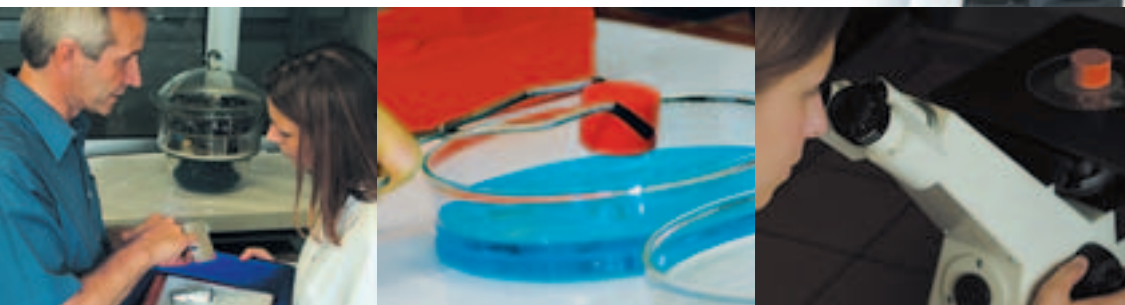
More Light. More in Reserve for Daily Use.

Optimal illumination for every application – the quality of light is a significant factor in the quality of your results. The standard source of light for transmitted and reflected light on the Axiovert 40 MAT is the 12 volt/35 watt lamp. For low reflection or strongly light absorbing specimens: the higher intensity of 12 volt/100 watt halogen lamps. In addition, the Axiovert 40 MAT can accept mercury vapor (HBO) or xenon lamps (XBO).

Push&Click



Materials laboratory



High-performance Optics. Outstanding in This Category.

The name Carl Zeiss stands for outstanding quality in optics. The basis for this exceptional performance is ICS optics (Infinity Color-Corrected System). Together with Köhler illumination, ICS optics guarantee color-corrected results that are so brilliant and rich in contrast that they meet even the highest demands placed on image quality. Whether budget-priced or highly sophisticated: Carl Zeiss provides a wide range of objectives that are optimized for all contrasting techniques.

Epiplan Objectives.

High Standards Are Standard.

The objectives in the Epiplan series provide you with sophisticated optics for routine work in technical microscopy. Corrected for use without a cover glass and for 23 mm field of view. Powerful objec-

tives for brightfield, DIC (Differential Interference Contrast) and polarization. For darkfield, use objectives from the Epiplan HD series.

EC Epiplan-Neofluar Objectives. Performance Knows No Boundaries.

Outstanding contrast and excellent imaging – all provided by the EC Epiplan-Neofluar objectives (Enhanced Contrast). They provide that extra necessary performance where conventional microscopes reach their limits – for example, with strongly light absorbing ceramics or low-reflection glass surfaces. Based on ICS optics, these innovative materials objectives offer the best quality currently available. Their large working distances and high numerical apertures are ideal if you want to capture clear, sharp images or use a high-resolution camera.

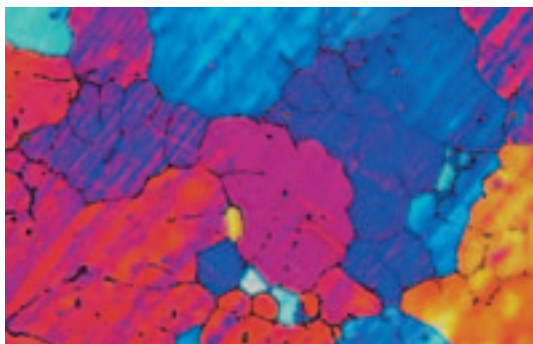
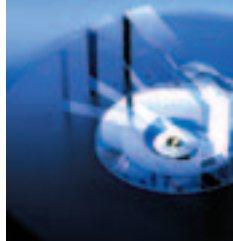
Outstanding optics, tailor-made for materials microscopy: the innovative EC Epiplan-Neofluar objectives offer the best contrast and imaging quality currently available. They are the objectives of choice, particularly for difficult materials.



Brightfield



Axiovert 40 MAT



LD Objectives. Better Results.

Ample room: the LD (Long Distance) objectives in the Epiplan and EC Epiplan-Neofluar series offer you large working distances which ensure that both specimens and objectives are largely protected from damage. This means safer and faster results, which you will particularly appreciate in when high throughput is necessary.

Contrasting Techniques.

The Whole Spectrum for Routine Applications.

Axiovert 40 MAT provides you with all essential contrasting techniques in reflected light for a wide range of routine laboratory applications. Its reflector modules P&C have the same high quality found in Carl Zeiss research microscopes. The reflector modules can be quickly and easily changed via Push&Click – an attractive advantage making it easier for you to attain reliable results in, for example, quality assurance or damage analysis. With Axiovert 40 MAT you can easily and quickly change contrasting techniques in reflected

Axiovert 40 MAT.

All contrasting techniques.

In reflected light	4-position HD	5-position H
Brightfield	•	•
Darkfield	•	
DIC	•	
Polarization	•	•
Fluorescence	•	•

In transmitted light

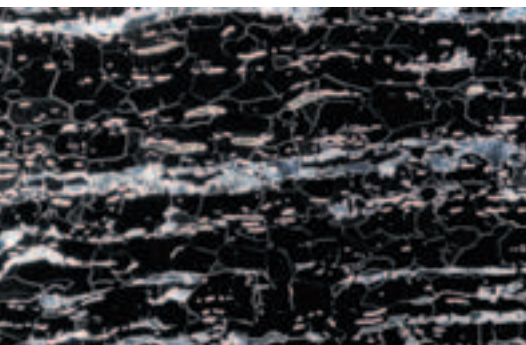
Brightfield	•	•
Phase contrast	•	•
PlasDIC	•	

light: brightfield, darkfield, polarization, DIC and fluorescence. You'll also appreciate the handy integrated storage compartments for your DIC sliders, particularly when you are using interference contrast. With its rotary analyzer and lambda compensator Axiovert 40 MAT permits optimal setting of polarization contrast and is thus particularly useful for materials with low bireflection.

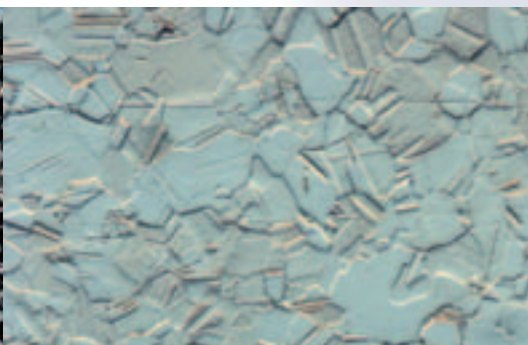


Perfect for polarization contrast in reflected light: the rotary analyzer slider 90° with lambda compensator Pol.

Darkfield



DIC



Polarization



The Equipment. Your Needs Dictate.

The demands you place on your materials microscope are as varied as what you need to accomplish with it. This requires enormous flexibility from a microscope. Axiovert 40 MAT's modular system is designed to provide this flexibility, providing solutions to the numerous challenges in your daily lab work. Completely integrated components and products ensure a fast and flexible response to the most diversified needs. And if you want, you can upgrade the Axiovert 40 MAT into an efficient digital imaging system.

4-position or 5-position Nosepiece? You Decide.

One microscope, two versions – with Axiovert 40 MAT you can decide between two stands with different nosepieces. Need to get standard magnifications fast and don't want to bother with the time-consuming exchange of individual objectives? Then you decide in favor of the stand with the 5-position nosepiece – a good choice, particularly in materials control and quality assurance. If you require darkfield contrast or DIC, then choose the stand with the 4-position nosepiece, designed specifically for these requirements.

The Components.

More Than an Option.

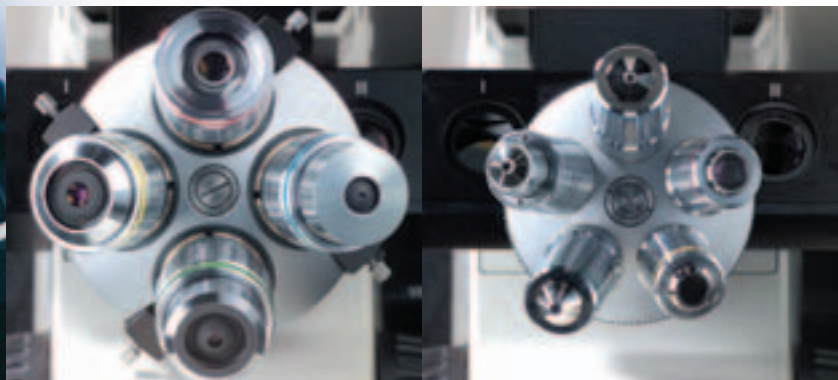
High-quality components ensure that the Axiovert 40 MAT is just the microscope that you need. From adaptable transmitted light for transparent materials up to the ball-bearing, 90° rotary and centerable mechanical stage, you have countless options at your disposal. As a result, you can make good decisions based on your budget without making any compromises in your applications.

Measuring Techniques.

Safety Through Precision.

Axiovert 40 MAT can be equipped with essential components for measuring – a digital micrometer eyepiece and a number of grain measuring reticles. In addition, hardness can be tested with the microhardness testing unit MHT 4/10. Together with the microscope software AxioVision, Axiovert 40 MAT offers you almost unlimited possibilities, ranging from component measurement in x, y to grain size, pore and phase analysis.

4-position and 5-position nosepiece



Axiovert 40 MAT



Cameras. Keeping an Eye on Documentation.

A port to attach a camera? A standard feature of Axiovert 40 MAT – and your entry into the world of digital imaging. Excellent results can be attained with the use of a consumer digital camera. However, for more demanding requirements you have the whole range of high-quality AxioCam cameras at your disposal. They all feature fast live images and can be completely integrated into the Carl Zeiss software and microscope systems.

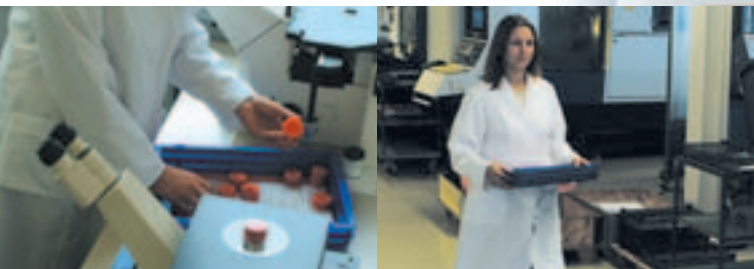
The Software. Intelligently Integrated.

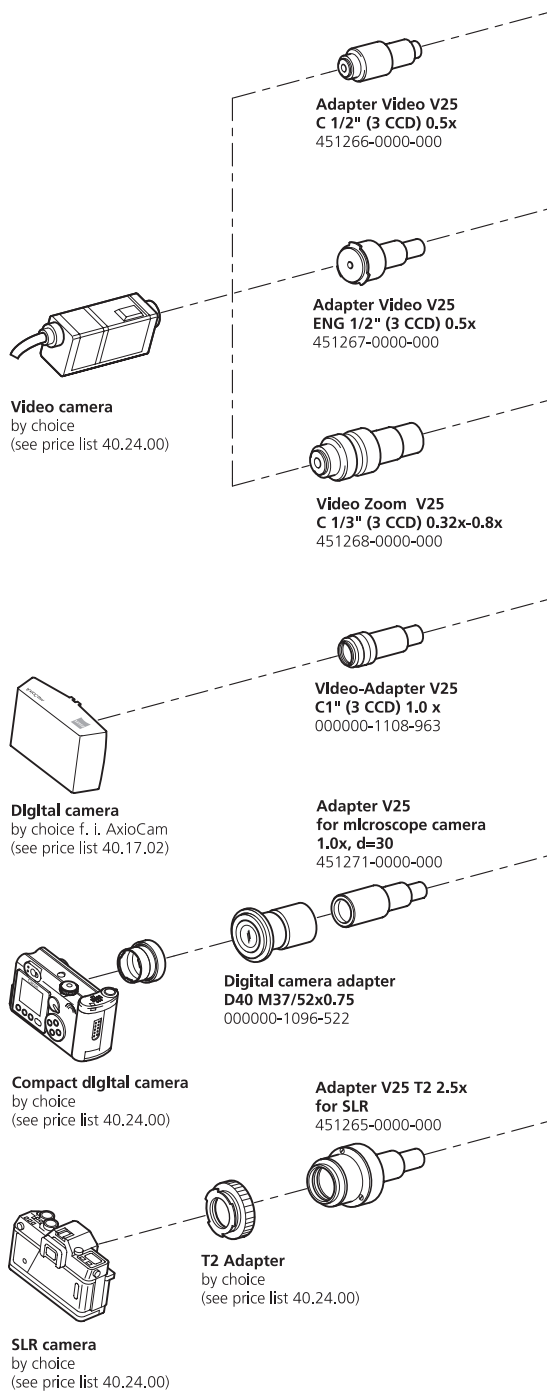
AxioCam MR comes equipped with basic software which includes all functionalities for imaging, simple image processing and analysis – both in current standard formats as well as in the file format ZVI from Carl Zeiss, which has been optimized for microscopic image processing. The advantage for you: easy upgrading to the comprehensive AxioVision software. Using this professional software package, you can seamlessly integrate optional modules and upgrade the Axiovert 40 MAT into a powerful imaging system.



Axiovert 40 MAT. The Whole Picture.

If you want workflows that are both effective and cost-effective, you need to see the whole picture: the range of components and how you can best assemble them to meet your individual requirements. That's why we've put together all Axiovert 40 MAT components for you on the following pages. Our experienced consultants will gladly help you to create the best microscope solution for your demands – maximizing performance while respecting your budget.

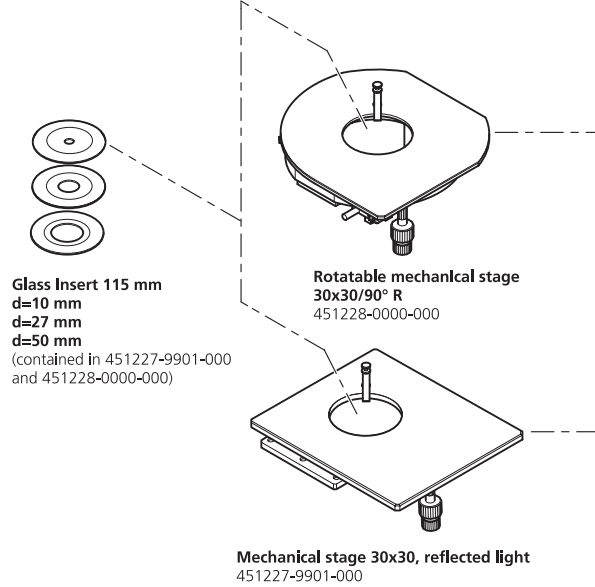
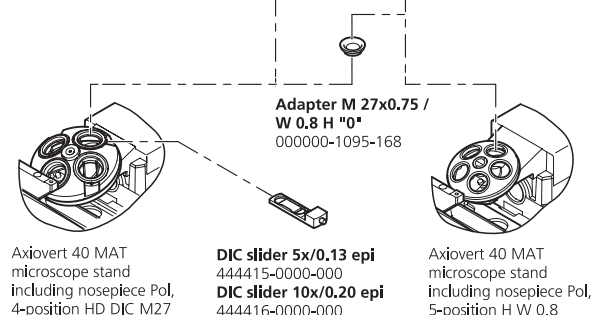




Objective "Epiplan" 5x/0.13 HD
442924-0000-000
Objective "Epiplan" 10x/0.20 HD
442934-0000-000
Objective "Epiplan" 20x/0.40 HD
442944-0000-000
Objective "Epiplan" 50x/0.70 HD
442954-0000-000
Objective "Epiplan" 100x/0.75 HD
442984-0000-000

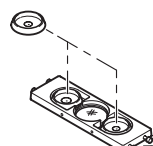
Objective "Epiplan" 5x/0.13
442920-0000-000
Objective "Epiplan" 10x/0.20
442930-0000-000
Objective "Epiplan" 20x/0.40
442940-0000-000
Objective "Epiplan" 50x/0.70
442950-0000-000
Objective "Epiplan" 100x/0.75
442980-0000-000

Objectives EC "Epiplan-Neofluar"
are also usable



Axiovert 40 MAT

Phase stop Ph 0/0.2
451261-0000-000
Phase stop Ph 1/0.2
451260-0000-000



Slider Ph, H, Ph
451245-0000-000

Condenser 0.55
(a=31mm)
451237-0000-000

Condenser 0.4
(a=53mm)
451235-0000-000

Condenser 0.2
(a=90mm)
451236-0000-000

Analyzer 90°
453667-0000-000

Compensator pol
Lambda sub. +/- 10°
453706-0000-000

Compensator Lambda
453707-0000-000

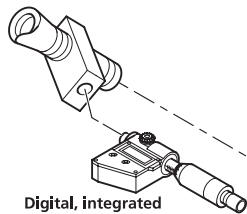
Filter slider d=25 mm
(contained in 451221-0000-000
and 451222-0000-000)

Eyeiece W-PL 10x/23 Br. foc.
455043-0000-0000
(optional with diaphragm, screwable
455043-0206-000)

Eyeiece eyecup
444801-0000-000

Format reticule
MC 2.5x/d=26 mm
454075-0000-000
Format reticule
MC 3.2x/d=26 mm
454076-0000-000
(see price list for
additional reticules)

Micrometer eyepiece 20x
444142-0000-000



Digital, integrated
micrometer screw (0)
000000-0425-878

Special eyepiece 20x
444141-0000-000

Auxiliary microscope d=30
000000-1006-362

Axiovert 40 MAT microscope stand
(including nosepiece Pol, 4-position HD DIC M27)
451221-0000-000

Axiovert 40 MAT microscope stand (without illustration)
(including nosepiece Pol, 5-position H W 0.8)
451222-0000-000

3-position
reflector slider P&C
451243-0000-000

Reflector module H P&C
000000-1046-274

Reflector module D P&C
000000-1099-898

Reflector module DIC P&C
000000-1046-277

Reflector module DIC red I P&C
000000-1046-278

Reflector module Pol P&C
000000-1046-279

Reflector module FL P&C
000000-1046-281

"Optovar" module 1.25x P&C
000000-1046-284

"Optovar" module 1.6x P&C
000000-1046-283

"Optovar" module 2.5x P&C
000000-1046-282

Carrier for 12 V 35 W transmitted-light illumination
451223-0000-000

Halogen lamp 12 V 35 W for Axiovert 40
000000-0234-793

necessary if
Illuminator 12 V 35 W
451224-0000-000

it is already used in the reflected light:
Power supply 12V DC 100W stabilized
000000-1128-574 and
Extension cable for HAL 12V 100W
457411-9050-000

Illuminator 12 V 35 W
451224-0000-000
Halogen lamp 12 V 35 W
for Axiovert 40
000000-0234-793

Power supply 12 V DC 100 W
stabilized
000000-1128-574

100 HAL lamp housing
with collector, lamp mount
447219-0000-000
Halogen lamp 12 V 100 W
380079-9540-000

Transformer mbq 52 ac-z
for HBO 50 ac
000000-1113-833

Lamp housing HBO 50 with socket
447220-0000-000
Lamp collector HBO 50/SF 25
447270-0000-000
HBO 50 super-pressure mercury lamp
381619-0000-000

Power supply unit
for N XBO 75
000000-1003-924

Illuminator N XBO 75
000000-1007-981
Collector N HBO 103/XBO 75
000000-1007-976
Xenon-lamp XBO 75 W/2
380079-9190-000

Filter slider 2-position d=25 mm
(contained in 451221-0000-000 and
451222-0000-000)
in addition grey filter,
conversion filter,
interference filter green,
filters for fluorescence excitation

Technical Data and Facts



The stands

Axiovert 40 MAT with 5-position brightfield nosepiece (W 0.8)
Axiovert 40 MAT with 4-position brightfield-darkfield-DIC nosepiece (M27)

The contrasting technique

Reflected light: brightfield, darkfield, polarization, DIC, fluorescence
Transmitted light: brightfield, phase contrast, PlasDIC

The objectives

Reflected light: Epiplan, EC Epiplan-Neofluar
Objectives for special purposes: LD objective (LD-Long Distance), immersion objectives
Transmitted light: CP Achromat, A-Plan, Plan Neofluar

The eyepieces

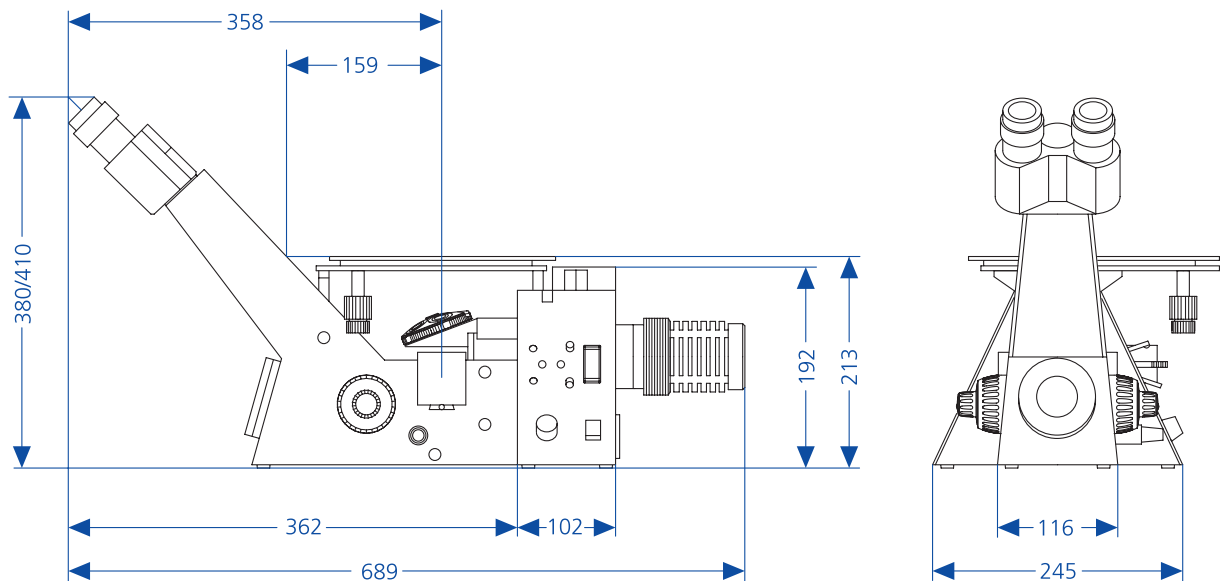
Brightfield eyepieces W-PL 10x/23 Br foc

The stages

Rotary mechanical stage 30x30/90° R
Mechanical stage 30x30 reflected light

Documentation

Cameras: AxioCam family, digital cameras, video cameras
Adapters: for many types of cameras
Software: AxioVision, camera software



Convincing Arguments.

Your Benefits at a Glance.

Axiovert 40 MAT. The inverted solution to the challenges of materials microscopy in the laboratory and in training courses.

- Flexible for a wide range of materials applications
- Sturdy and rock-solid while light in weight
- High-quality, robust mechanics
- Brilliant Carl Zeiss optics
- Powerful materials objectives from the Epiplan and EC Epiplan series
- Specially designed objectives: LD Epiplan and LD EC Epiplan-Neofluar
- Two stands: 5-position nosepiece for fast standard magnifications and a 4-position one for darkfield and DIC
- Impressive spectrum of components and modules
- Upgradable to a powerful imaging system



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Subject to change