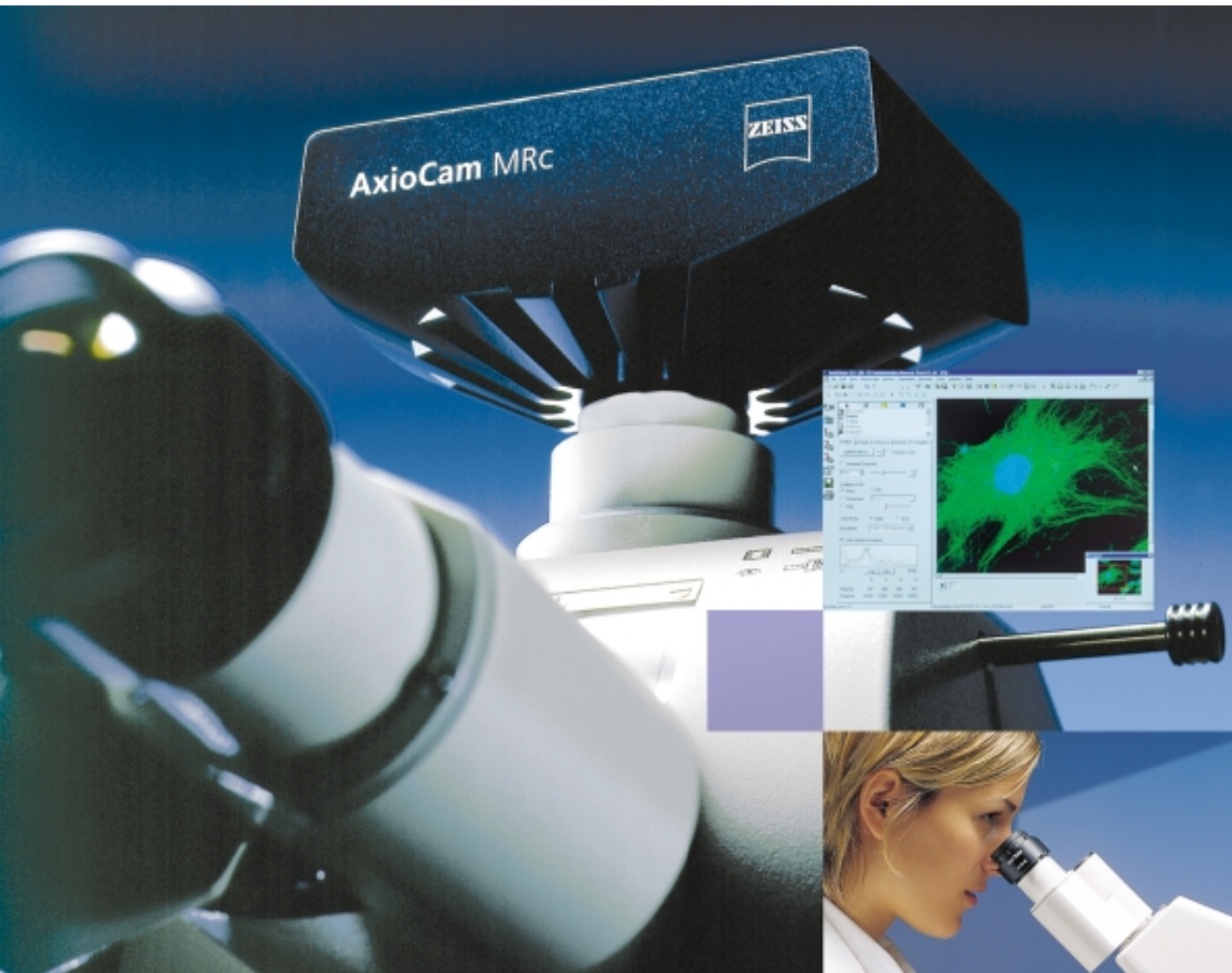


# AxioCam MR

The All-round Camera for Biology, Medicine and Materials Analysis



**Digital Documentation in Microscopy**





# New Dimensions in Performance

## AxioCam MR from Carl Zeiss

Both research and routine assignments in biology, medicine and materials analysis are placing increasingly tough demands on documentation. Moreover, the need for publication quality images and reporting requires a performance from microscope cameras that surpasses that of conventional video and consumer digital cameras. AxioCam MR offers features that meet these demands – at a price that can't be beat. AxioCam MR acquires ultra-sharp images in either color or monochrome and is the perfect partner for your Carl Zeiss microscope. AxioCam MR: a real all-rounder that even includes software which enables you to optimize your documentation work in the lab.

### Outstanding price and performance AxioCam MR

This mid-resolution camera from Carl Zeiss has excellent resolution of 1300 x 1030 and 12-bit digitization. A/D conversion is performed directly in the camera head, producing image and color quality far beyond the possibilities of standard video. It is possible to achieve – and surpass – the resolution of considerably more expensive 3-chip CCD models.

### Benefit upon benefit

The "Zeiss Blue" offers more than high resolution and brilliant images. It also provides such outstanding benefits as compact size and increased efficiency in addition to optimum adjustment to your microscope and software. Image acquisition, processing and archiving can be accomplished with only a few simple steps. Inconvenient switching of cameras and tangled cables are a thing of the past: A single long cable is sufficient for data and energy supply. And to top it all off, the camera set contains special operation software which permits easy capture, processing and saving of the image.

*Compact, powerful and easily adjustable via C-mount:  
The "Zeiss Blue" is a high performer in research and routine areas.*



*AxioCam MR: Easy to use and widely implemented in biology, medicine, and materials analysis.*

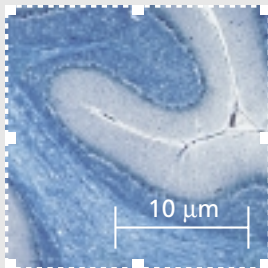
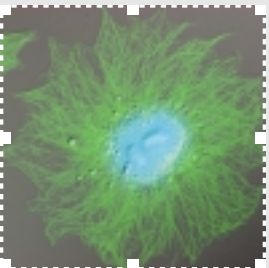


# An Unbeatable Combination

## The Compact Camera with Operation Software

AxioCam MR meets the digital imaging needs of most applications in the life sciences and materials science, competing favorably with conventional 3-chip CCD video cameras in cost and surpassing their image quality. AxioCam MR is equally well-suited to macro imaging with the addition of a suitable C-mount macro lens.

High resolution and color-fast images coupled with efficient processes – AxioCam MR guarantees you high performance and productivity, especially when it is bundled with a Carl Zeiss microscope. And the optional high-performance AxioVision software provides you with sophisticated features to process, measure and archive your images.



### Capture

Camera control  
Focus, and image acquisition  
Microscope control

### Processing

Adjustment of contrast, brightness, color, and sharpness

### Annotation

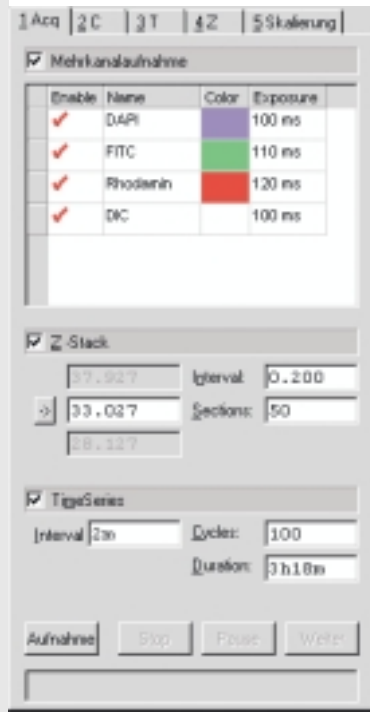
Insertion of scale bars, markings, and text

### Archiving

Image data, measurement data, microscope and recording settings

### Report

Individual reports with images, texts, annotations, and microscope settings



*AxioVision, the high-performance software from Carl Zeiss, for multichannel and Z-stack images.*

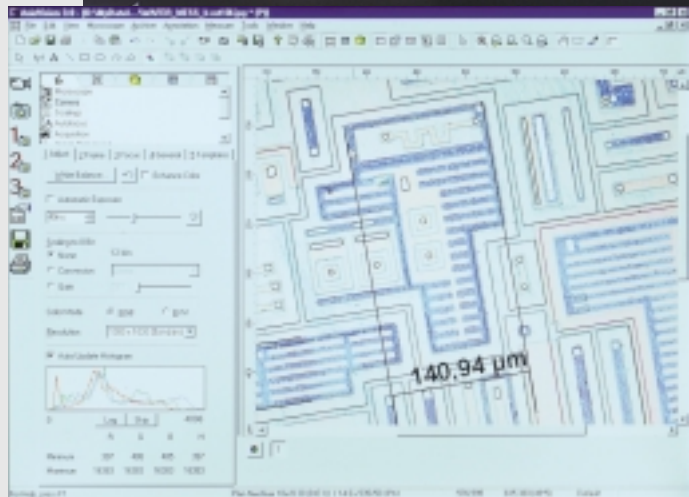
# Meets Your Needs

## AxioCam MRc for Materials Analysis

AxioCam MRc is the camera of choice for a wide range of applications. These can be in materials research, materials analysis or quality assurance – and in such industries as semi-conductor, aerospace, automotive or steel. With a resolution (real color) of 1300 x 1030 pixels, it surpasses the quality of an expensive professional 3-chip CCD video camera. You can easily select and focus segments of the image via the real time online color image. AxioCam MRc produces excellent quality digital images for report generation or for subsequent quantification, eg. particle size analysis, layer thickness measurements, grain sizing and phase distributions. The sophisticated, application-oriented features of AxioCam MRc ensure that this camera will meet the rapidly growing demands of today's materials laboratory.

### Highlights for materials analysis

- High 12-bit dynamics
- 18 MHz digitization
- Maximum resolution in 1300 x 1030 pixels
- 36-bit color depth
- Adjustable ROI (Region of Interest)
- Adjustable binning
- Absolutely color-fast images
- Fast live color image
- Small camera size allows optimal system integration
- Easy to use without external control box and power supply
- Vibration-free operation (no mechanical cooling fans, shutters or filter wheels)
- Data transmission and power supply via single cable



*In materials analysis, this versatile camera is setting new standards in performance and price.*



# Superb Results in Color and B/W

## AxioCam MRc and MRm in Biology and Medicine

Microscope cameras can be used in a broad range of applications in biology and medicine. The keyword here is fluorescence. And that's why Carl Zeiss has created a monochrome model in addition to the color version. The monochrome AxioCam MRm uses peltier cooling to ensure a low noise and high dynamic range. With a spectral response from 300nm to the near IR, AxioCam MRm is ideally suited for low light fluorescence situations, for example, in time-lapse live cell imaging (GFP) or multichannel fluorescence. Through its sophisticated technology, the color model AxioCam MRc easily masters all routine tasks in pathology, neuroscience, cytology, zoology and botany. The high dynamics of 12 bits per color channel allow you to save and process your recordings with maximum gray value resolution and quality.

### Highlights for biology and medicine

- High 12-bit dynamics
- 18 MHz digitization
- Maximum resolution in 1300 x 1030 pixels
- Long exposure times
- 36-bit color depth
- Adjustable ROI (Region of Interest)
- Adjustable binning
- Absolutely color-fast images
- Fast live image
- Small camera size allows optimal system integration
- Easy to use without external control box and power supply
- Vibration-free operation (no mechanical cooling fans, shutters or filter wheels)
- Data transmission and power supply via single cable

### Special features of AxioCam MRm

- Expanded spectral range
- High sensitivity for near infrared
- High-quality fluorescence images, even with specimens with extremely low light intensity



*12-bit dynamics plus cooled sensor: an effective combination for brilliant fluorescence images.*

# You Can Count on Better Results

## Technical Specifications

### A tradition of excellence: the camera from microscope experts

For 150 years Carl Zeiss has been a major influence in the development of microscopy – through trend-setting innovations and uncompromising quality. With AxioCam MR, Carl Zeiss has successfully attained the challenging goal of providing you with optimal camera

technology for routine microscopy performance – technology that is perfectly tailored to your fields of work and your microscope system. Above all: If your microscope system is from Carl Zeiss, then AxioCam MR gives you excellence at an unbeatable price/performance ratio.

Technical Specifications AxioCam MRc / MRm				
1. CCD Basic Resolution	1300 x 1030 = 1.3 mega pixels			
2. Pixel Size	6.7 µm x 6.7 µm			
3. Sensor Size	Imaging area 8.7 mm x 6.9 mm, equivalent to 2/3"			
4. Spectral Range	MRc: approx. 400 nm – 710 nm (color), with BG 40 IR blocking filter, Bayer color filter mask MRm: approx. 350 nm – 990 nm (monochrome), with BK7 glass cover, no IR blocking filter			
5. Max. Charge / Pixel	Full well 18,000 e			
6. Resolutions with Binning (B/W & Color)	horizontally	x	vertically	
	260	x	206	(Binning 5x5, RGB)
	325	x	257	(Binning 4x4, B/W)
	433	x	343	(Binning 3x3, RGB)
	650	x	515	(Binning 2x2, B/W)
7. Live Image Frame Rates (Binning in Color Mode)	Max. frame rate	Modus	horiz. x vert.	Binning
	7 frames/s	slow	1300 x 1030	1
	17 frames/s	medium	433 x 343	3
	25 frames/s	fast	260 x 206	5
8. Readout of Sub Frames	Random definition of regions of interest on the sensor ("ROI")			
9. Digitization	12 Bit / 18 MHz pixel clock			
10. Dynamic Range	Typical >1600 : 1 at < 12 e readout noise			
11. Range of Integration Time	1 ms up to 20 s			
12. Cooling	Only for AxioCam MRm single stage peltier cooling			
13. Product Types	CCD sensor color or B/W			
14. Signal Output Connector	TTL signal output prepared for control for external shutters			
15. Interface	PCI interface card with cable for data and control lines			
16. Optical Interface	C-mount			
17. Max. File Size per Image	Ca. 8 MB at 1300 x 1030 @ 3 x 12 Bit (color)			
18. Operating Systems	Win 98, Win ME, Win NT 4.0, Win 2000			
19. Size / Weight	Approx. 11 cm x 8 cm x 4.5 cm / 370 g			
20. Housing	Aluminium, with fins, blue anodized, 1/4" tread for tripod mount			
21. Registration	GS, CE, cUL			
22. Power Supply	12 V DC, 350 mA, Power supply by the PCI interface card over the data cable (no external power supply required)			

### Carl Zeiss Light Microscopy

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E-Mail: [mikro@zeiss.de](mailto:mikro@zeiss.de)

Subject to change

Comment: Above frame rates are supported by the camera electronics at 20 ms exposure time, attained with Pentium IV 1,3 GHz. Computer hardware, operating system and application software may influence the frame rates.