

High Resolution e-ImageData 26 Megapixel Camera

High resolution 26 megapixel camera The ScanPro 3000 26 megapixel camera has the highest camera resolution of any microfilm scanner on the market.

What is camera resolution and what to look for?

When referring to camera resolution some terms that are used can be confusing. The best way to explain resolution is to start with standard definitions:

- a. **Camera resolution** is the number of **unique** optical pixels captured by the camera and is **typically specified in megapixels**.
- b. **Image quality** describes the readability of a document and is primarily dependent on camera resolution. There are other factors that contribute to image quality but **camera resolution** is the primary contributor and most commonly used measurement.
- c. **Maximum image size (also specified in megapixels)** defines how much space is needed to store the image in memory or on a storage device such as a hard drive or flash drive. And, **maximum image size is not** at all a measurement of image quality.

For low end cameras, camera resolution is dependent on **the image sensor resolution** only. However, top of the line camera manufacturers such as Olympus, Zeiss, Leica, Nikon and others use pixel-shifting technology and employ high precision optics to create cameras with resolutions that far exceed the specification of the simple image sensor. The ScanPro 3000 uses this same technology starting with a 6.6MP image sensor and then using precision optical hardware, captures 26.4 megapixels of optical data. Each pixel is an optical capture of unique image information and the total optical image is a high resolution 26.4 Megapixels. This **(expressed as) 26 Megapixel camera** is the **highest resolution microfilm scanner camera available**.

Camera manufacturers develop cameras with resolutions higher than that of the simple sensor: Although this type of camera design is new in the micrographics industry, highly respected, well known imaging corporations have been doing this for years. We will look at several high-end cameras and the manufacturers that describe their design and provide documentation:

The Olympus DP73 camera is a high-end camera that incorporates pixel-shifting technology and precision optical hardware to achieve a high-end, high resolution camera. In this example, Olympus starts with a **2.01 megapixel sensor** and using pixel-shifting technology captures 17.28 megapixels of unique image information to provide a superior performance **(expressed as) 17.3 megapixel camera** (see attached Olympus camera information).

The Carl Zeiss AxioCam camera is another example of a high-end camera that incorporates pixel-shifting technology and precision optical hardware to achieve a high performance camera used in research and digital documentation. In this example, Carl Zeiss starts with a **1.4 megapixel sensor** and using pixel-shifting technology captures 12.99 megapixels of unique image information to provide a superior performance **(expressed as) 13 megapixel camera** (see attached Carl Zeiss camera information).

Despite the fact that this technology information regarding high resolution camera capabilities is readily available from camera manufactures, ST Imaging continues to provide false and misleading information regarding our 26 megapixel camera to e-ImageData customers and prospective customers. We are providing this corrective information to you and your sales people to assist in preventing further damage to your company and to e-ImageData.

OLYMPUS[®]

Your Vision, Our Future

Digital Cameras for Microscopy

Camera Overview

For Materials Science Microscopes

NEW

Olympus Digital Cameras for Materials Science Applications: For Clear and Precise Image Analysis



Industrial Microscopes

DP73

Overview

The **Olympus DP73** high-performance Peltier cooled, digital color **cameras** offer the latest **pixel-shifting technology with** an extraordinary **17.28 megapixel resolution**, 4 binning modes, and 14-bit A/D conversion for increased bit depth.

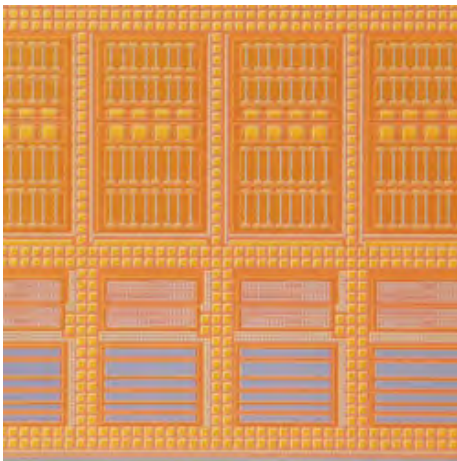
Superb Resolution

High Sensitivity, High dynamic range

Advanced Color Reproduction

Image Analysis Software OLYMPUS Stream

Superb Resolution

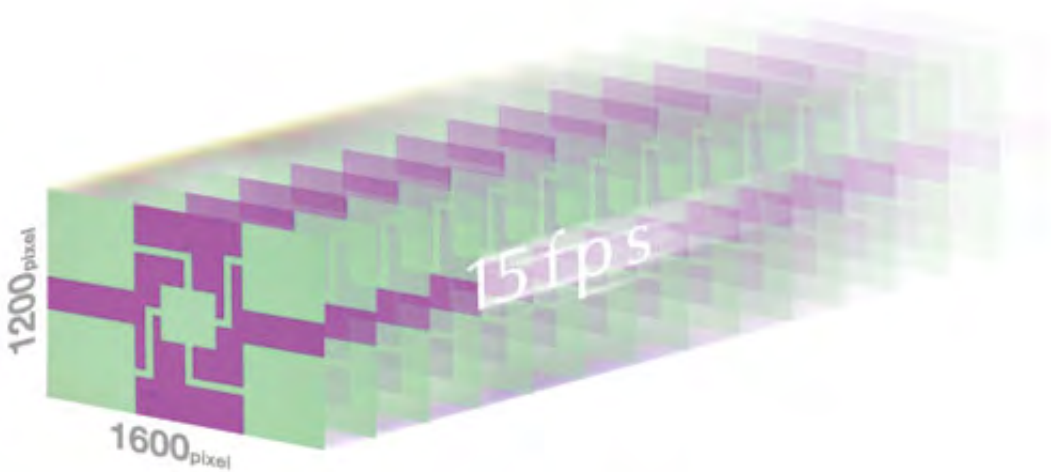


Unparalleled **17.3 Megapixel Resolution** New 3-CCD Mode Enables Pixel Shifting of 3 Colors

A **2.01 megapixel color CCD** is combined with **pixel-shifting technology** to result in the **capture of an 17.3 megapixel resolution**. In addition to conventional 3 x 3 pixel shifting of one color per pixel, the DP73 features a 3-CCD pixel shift mode that enables three-color image resolution (RGB) within a single pixel to improve resolution even more.

Live, High-definition Images at 15 Frames per Second, Without Compression

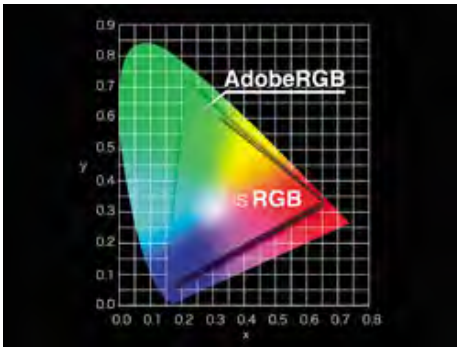
High-definition 1600 × 1200-pixel images can be displayed live at a rate of 15 frames per second, without compression. This imaging quality enables clear and distinct observation without deterioration, while focusing is made stress free. The DP73 is able to display various microstructures like fine patterns of wafers and surface of new materials.



Fine-detail Processing, with Truer Colors and Artifacts

The DP73 has the power to present truer colors with less moiré artifacts that can have a negative impact on resolution. Due to advanced algorithms and fine detail processing the DP73 also optimizes the resolving power of the microscope objectives resulting in improved sharpness and clarity of images.

Advanced Color Reproduction



Color Gamut Comparison

Enhanced Color Reproduction for Difficult Samples

Through supporting AdobeRGB*, the DP73 faithfully renders a broad color range. It also features a new color reproduction algorithm, that differentiates subtle changes in colors that were difficult to separate until now- colors such as brown, blue and purple-can now be reproduced with exceptional accuracy.

*Color reproduction fidelity depends on monitor specifications. Monitors supporting AdobeRGB are required to accurately reproduce images recorded in AdobeRGB mode.

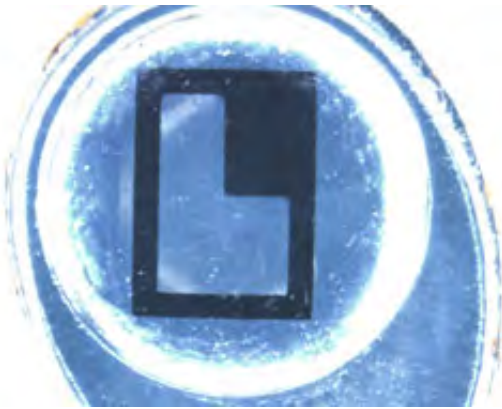
High Sensitivity, High dynamic range

High Sensitivity and Reduced Noise for Low Light Conditions

Capture images across a broad sensitivity range of ISO100-1600 through the incorporation of features including a new CCD drive system, reduced circuit noise and optimized image processing. These technologies allow the CCD to clearly capture sample details during observation methods such as reflected light darkfield or fluorescence.

WiDER Optimizes Contrast and Brightness in Individual Image Regions

Process live image with WiDER*-an application that optimizes contrast and brightness in each region of the image in real time to automatically generate images that have broad dynamic range but are free from under- or overexposure. It works to reduce halation from the surface of materials, solder and so on.



Without WiDER



With WiDER

Image Analysis Software OLYMPUS Stream

Micro-Imaging Software: A New Standard for Workflow Flexibility

The OLYMPUS Stream is an advanced industrial microscopy software that simplifies your imaging tasks. Quickly acquire, process, perform measurements or analysis and automatically create reports. Our robust data management provides seamless organization and management of your images and data. The OLYMPUS Stream software can be purchased in a variety of packages designed to fit your needs. In addition these packages are expandable with specific application solutions to meet unique analysis needs.



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Specifications

| | | |
|-----------------------------|---|-------------------------------------|
| Camera type | Single chip color CCD (pixel shifting) Cooling system: Peltier device (maximum: room temperature - 10°C) | |
| Imaging Sensor | Size | 1/1.8 inch 2.01 megapixel color CCD |
| | Scanning mode | Progressive |
| Camera mount | C-mount | |
| Effective image resolution | <ul style="list-style-type: none"> • 4800x3600 (pixel shifting, 3CCD mode) • 2400x4800 (pixel shifting, 3CCD mode) • 1600x1200 (1x1, 3CCD mode) • 800x600 (1x1) • 800x600 (2x2) • ROI | |
| Sensitivity | ISO 100/200/400/800/1600 | |
| A/D | 14 bit (effective pixel : 12 bit@ 16 bit mode image) | |
| Exposure control | Modes | Auto/SFL-Auto/Manual |
| | Adjustment | ±2.0 EV step: 1/3 EV |
| | Time | 23 μs to 60 s |
| Metering modes | Full image/30%/1%/0.1% | |
| Binning | 2x2 | |
| Live frame rate * | 1600x1200 (1x1): 15fps 800x600 (1x1): 15fps 800x600 (2x2): 27fps | |
| Still image transfer time * | 4800x3600 (1x1): approx. 4 s | |
| Color space | sRGB, Adobe RGB | |
| Image file format | File formats supported by OLYMPUS Stream software | |

AxioCam HR

Success Through Performance



**The flexible high-end camera for
digital documentation and image analysis**



We make it visible.

Superior performance for research and routine work – brilliant quality documentation

Increasingly complex applications in pathology, developmental biology and material science demand microscope systems and camera technologies that reach the very limits of what is physically possible. A Carl Zeiss camera that meets even the highest demands of digital documentation has established itself in high-end microscopy. The monochrome version is, ideally suited to Live Cell Imaging – even at high speeds. The color variant can be used universally: in fields ranging from materials sciences and the materials industry, pathology, cytology, hematology and histology through to botany, zoology, forensics and pharmacology.

High-resolution for lossless digital microscopy

Documenting with the AxioCam HR means seeing what the microscope sees – in full microscope resolution without interpolated image information. Different resolutions can be set depending on the application: from 1388 x 1040 up to 4164 x 3120, corresponding to 13 megapixels per color channel.

Outstanding image quality even with weak fluorescence

With a dynamic range of 1 : 2500 (at 12.5 MHz) and a 14 bit gray level range, the monochrome version of the AxioCam HR produces high-contrast images even when it comes to demanding applications in fluorescence microscopy. The Peltier-cooled camera offers exposure times ranging from milliseconds up to several minutes. The advantage: high-quality images, even when signals are extremely weak.

Selectable read-out modes for more flexibility

The option of selecting from two different read-out speeds (12.5 MHz and 25 MHz), as required, makes the AxioCam HR impressively versatile in terms of the range of applications it can perform. With the fast read-out mode of 25 MHz, live images of between 12 images/s (full resolution) and 33 images/s (reduced resolution) can be achieved. The advantages this offers are simple adjustment of the sample and ergonomic focusing in all situations. In conjunction with the AxioVision Digital High Speed Recorder module or the





Axio Observer



SteREO Discovery



Axio Imager

Systems with Carl Zeiss quality: the complete solution with microscope, camera and software

Cell Observer® HS, fast time lapse or multidimensional imaging is also possible with up to 48 images/s using 5x5 binning, e.g. for the observation of extremely fast processes. Optimized fast acquisition of scanned resolutions can also be performed. All in all, this means that the right setting is available for every application.

Maximum convenience in a compact format

Very small dimensions and no external control box: the Zeiss Blue can be integrated as a compact solution into any laboratory or working environment and will not restrict your freedom of movement. As the AxioCam HR does not have rotating fans, it works without any vibrations and transfers the digital image data directly to your computer without interference.

Perfect interaction in the overall system

Carl Zeiss offers a wide range of components that complement each other perfectly and, when combined as an overall system, offer your applications optimum support. The AxioCam HR can be connected to any Carl Zeiss microscope that has a

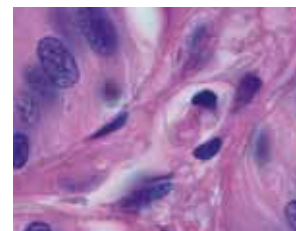
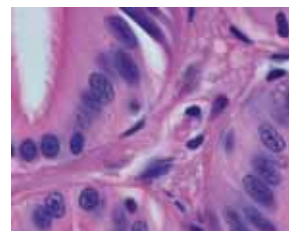
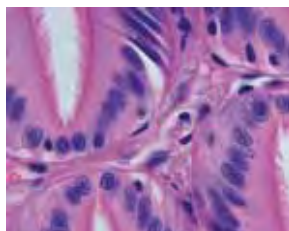
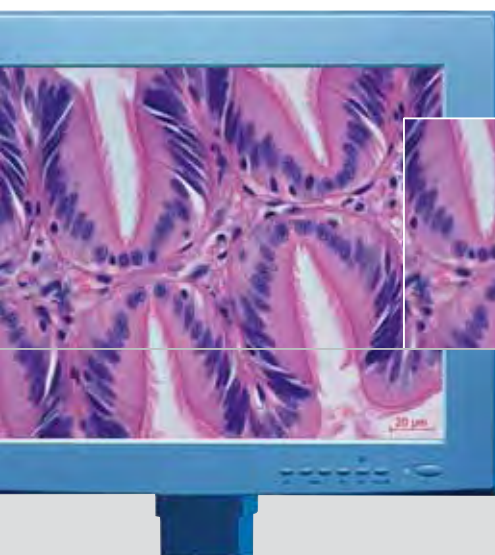
phototube or TV output. When combined with the Axio Imager or Axio Observer research microscopes and the AxioVision imaging software, you will have a high-performance system with a high degree of automation – for reliable, reproducible results.

Intelligent control with AxioVision

AxioVision from Carl Zeiss is the software for all requirements in digital imaging. It allows you to control all the functions of both the camera and microscope. Acquisition and processing, analysis and archiving – all your work procedures combined in a single platform. AxioVision is practice-oriented, intuitive in terms of operation and easily adapted to your individual requirements. In addition, you can also present your image data in a meaningful way: the Unsharp Masking option allows even the finest details to be displayed in high contrast on the monitor.

Highest image quality using microscanning Acquisition time at short exposure times:

| Resolution | AxioCam HRc | AxioCam HRm |
|-------------------------|-------------|-------------|
| 1388 x 1040 | 0.3 s | - |
| 2776 x 2080 | 1.4 s | 0.4 s |
| 4164 x 3120 | 2.6 s | 0.9 s |
| 4164 x 3120 (Fast Scan) | 0.6 s | - |



*Loligo Pealei (squid), liver,
Stain: hematoxylin eosin,
David Patterson, Marine Biological Laboratory,
Woods Hole, Massachusetts, USA*

Flexibility for every application: color and monochrome

Color or monochrome: always the right choice

Routine tasks or individual applications – the AxioCam HR from Carl Zeiss is the camera of choice for the complete range of applications. Whether you use it as a versatile color camera or in the monochrome variant with optional RGB filter modules – the AxioCam HR delivers color images in extremely high resolution, for every application.

Color co-site Sampling for excellent color brilliance

Accurate color images of even the finest structures without color moiré: the large CCD sensor of the AxioCam HRc ensures perfect color accuracy. By scanning all the red, green and blue components of the image, the patented Color co-site Sampling technique achieves a color brilliance that can otherwise only be achieved using 3 sensors. It guarantees you complete color information for every pixel – no “approximated” interpolated colors.

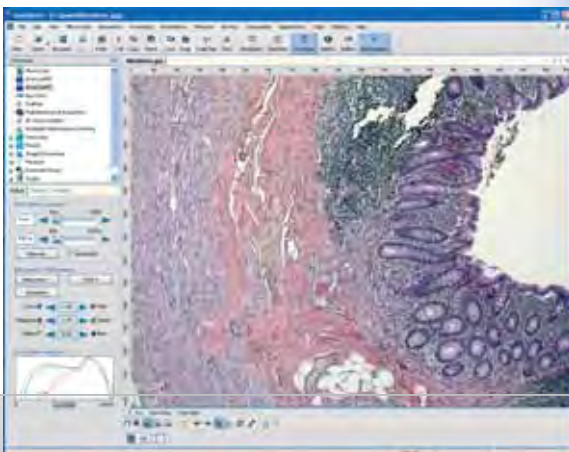
High performance at low light intensities

The extremely high sensitivity of the large 2/3" sensor, an outstanding signal to noise ratio and Peltier cooling for long exposure times – these are the qualities that allow the AxioCam HR to make high-quality imaging possible, even under the most challenging lighting conditions.

Monochrome CCD for fluorescence imaging

Sensitive, weakly fluorescing specimens or contrast and acquisition procedures in several dimensions require maximum resolution with exposure times that are as short as possible. The monochrome version of the AxioCam HR has been specially developed with an enhanced sensitivity range to cope with these demanding tasks.

Medicine

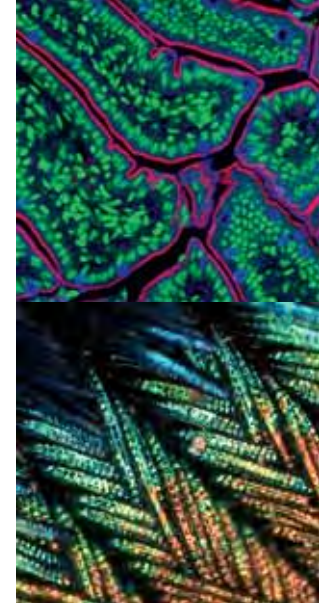


Appendix, Prof. Dr. Joachim Diebold,
Institute of Pathology at the University of Munich,
Germany



Applications

*Peacock feather,
Martin Distel, Reinhard Köster,
GSF, Institute of Developmental Genetics,
Neuherberg, Germany*



Superior performance without color filters

Crucial for your results when working at the limits of visibility: clear advantages in resolution and sensitivity thanks to a CCD sensor without light-reducing color filters.

- The spectrum of detectable light is extended into the otherwise invisible near infrared.
- Even in the basic resolution of 1388 x 1040 pixels, images are acquired without the interpolation of a color sensor and the compromises associated with this.
- Images are scanned 4 x faster than with the color camera.
- The size of the file is reduced to a third compared with the AxioCam HRc color camera.

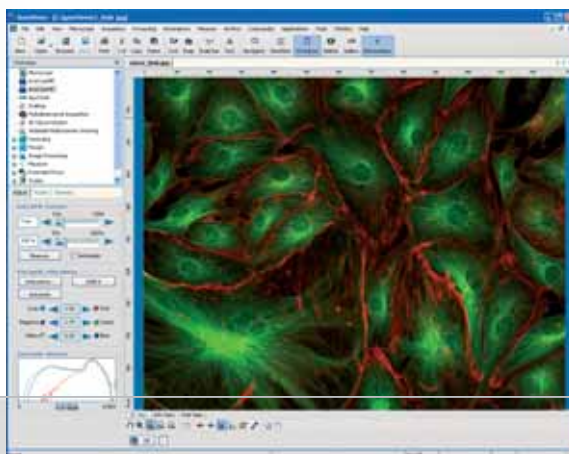
Full-strength signals

With the monochrome AxioCam HRm, no optical elements such as color or infrared filters stand in the way of the light. This means that even fluorochromes that emit in the near infrared are detected by the AxioCam HRm.

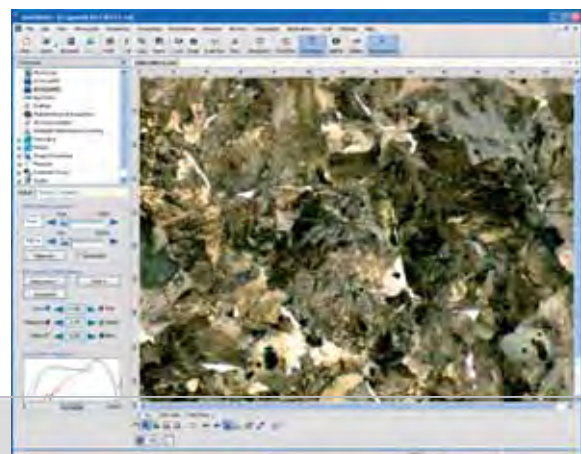
Maximum performance for live cell applications

A unique feature of the AxioCam HR is the possibility of adjusting microscanning and the read-out speed. This combination means that the AxioCam HR can be used with a high degree of versatility – making it an economical and individually adaptable solution that is particularly attractive to research institutes which carry out many different live cell applications. It is only in combination with the Cell Observer® system, however, that you can fully exploit the possibilities of the camera – especially those offered by the monochrome version. Integration into AxioVision enables you to perform every conceivable application in Live Cell Imaging – from extremely fast, one-dimensional time lapse imaging and individual images in multi-channel fluorescence applications through to the combination of fast time lapse images with multi-dimensional acquisition – all with just one camera.

Biology



Materials Analysis





Brilliantly sharp color images thanks to Color co-site Sampling

With ordinary 1-chip digital cameras, color images are acquired with a sensor. Each pixel of this sensor is sensitive to just one of the three basic colors. As only one image is acquired, each sensor pixel receives only the color information for red, green or blue at any one point in the image. However, as all three color channels are required simultaneously at a single point in the image in order to display a pixel in color, the missing color channels are determined by means of interpolation from the nearest neighboring pixels. This approximation results in the generation of imperfect images which display disruptive color fringes and distorted colors at fine image structures and edges.

With the Color co-site Sampling technique used by the AxioCam HR, several images of a specimen are produced and combined into a sharp resulting image. After the acquisition of each image a piezo mechanism moves the sensor by precisely the

distance of one pixel, meaning that each point is seen by the sensor at least once in all colors. Interpolated color information is therefore not needed. In this way, the complete color information for each detail is obtained in four images and put together to form one image that is identically sharp in all three color channels.

Microscanning for all details

Using the same procedure you can achieve even more, however: by acquiring images at additional positions in the spaces between pixels, the accuracy of the images produced by the AxioCam HR is increased again, also in case of the monochrome camera. With up to three additional positions on the x and y axes, the resolution is increased from 1388 x 1040 by a factor of 9 up to 4164 x 3120 pixels. The Color co-site Sampling used at the same time ensures perfect, color-correct reproduction of the finest structures.

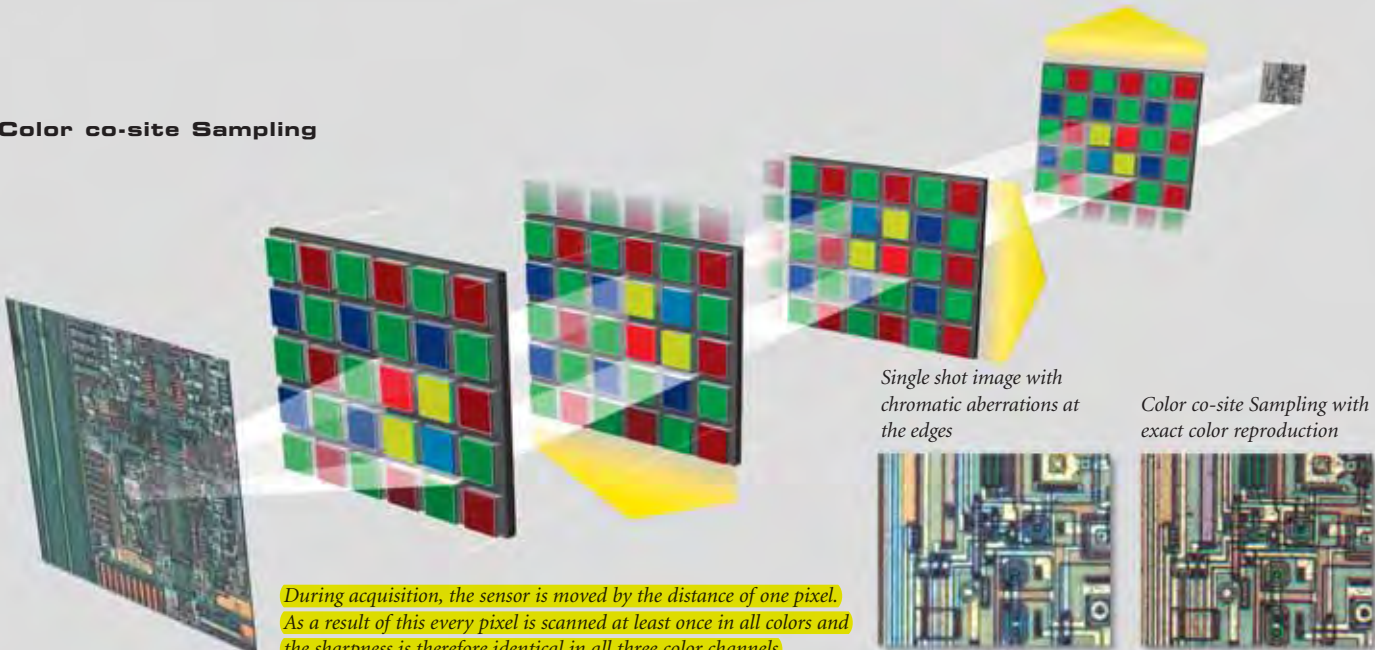
The resolving power of Carl Zeiss objectives in the intermediate image with 0.63x and 1.0x TV adapters in combination with the AxioCam HR's 2/3" CCD sensor (8.5 mm x 6.4 mm).

| Objective | Magnification | NA | Lp/mm (TV-Cpl 1.0x) | Necessary camera resolution | Lp/mm (TV-Cpl 0.63x) | Necessary camera resolution |
|--------------------------|---------------|-------|------------------------|--------------------------------|-------------------------|--------------------------------|
| 1. EC Plan-NEOFLUAR | 1.25 | 0.035 | 96 | 1632 x 1229 | 152 | 2584 x 1946 |
| 2. FLUAR | 2.5 | 0.12 | 144 | 2448 x 1843 | 229 | 3893 x 2931 |
| 3. EC Plan-NEOFLUAR | 5 | 0.15 | 90 | 1530 x 1152 | 143 | 2431 x 1830 |
| 4. ACHROPLAN/N-ACHROPLAN | 10 | 0.25 | 75 | 1275 x 960 | 119 | 2023 x 1523 |
| 5. FLUAR | 10 | 0.5 | 150 | 2550 x 1920 | 238 | 4046 x 3046 |
| 6. EC Plan-NEOFLUAR | 20 | 0.5 | 75 | 1275 x 960 | 119 | 2023 x 1523 |
| 7. Plan-APOCHROMAT | 20 | 0.75 | 113 | 1921 x 1446 | 179 | 3040 x 2291 |
| 8. LCI Plan-NEOFLUAR | 25 | 0.80 | 96 | 1632 x 1229 | 152 | 2584 x 1946 |
| 9. EC Plan-NEOFLUAR | 40 | 0.75 | 56 | 952 x 717 | 89 | 1513 x 1139 |
| 10. EC Plan-NEOFLUAR | 40 | 1.3 | 98 | 1666 x 1254 | 155 | 2635 x 1984 |
| 11. Plan-APOCHROMAT | 63 | 1.4 | 67 | 1139 x 858 | 106 | 1802 x 1357 |
| 12. EC Epiplan-NEOFLUAR | 100 | 0.9 | 27 | 459 x 346 | 43 | 731 x 550 |
| 13. Plan-APOCHROMAT | 100 | 1.4 | 42 | 714 x 538 | 67 | 1139 x 858 |

Technology

View through the C-mount connection and the infrared barrier filter on the high-resolution CCD sensor

Color co-site Sampling



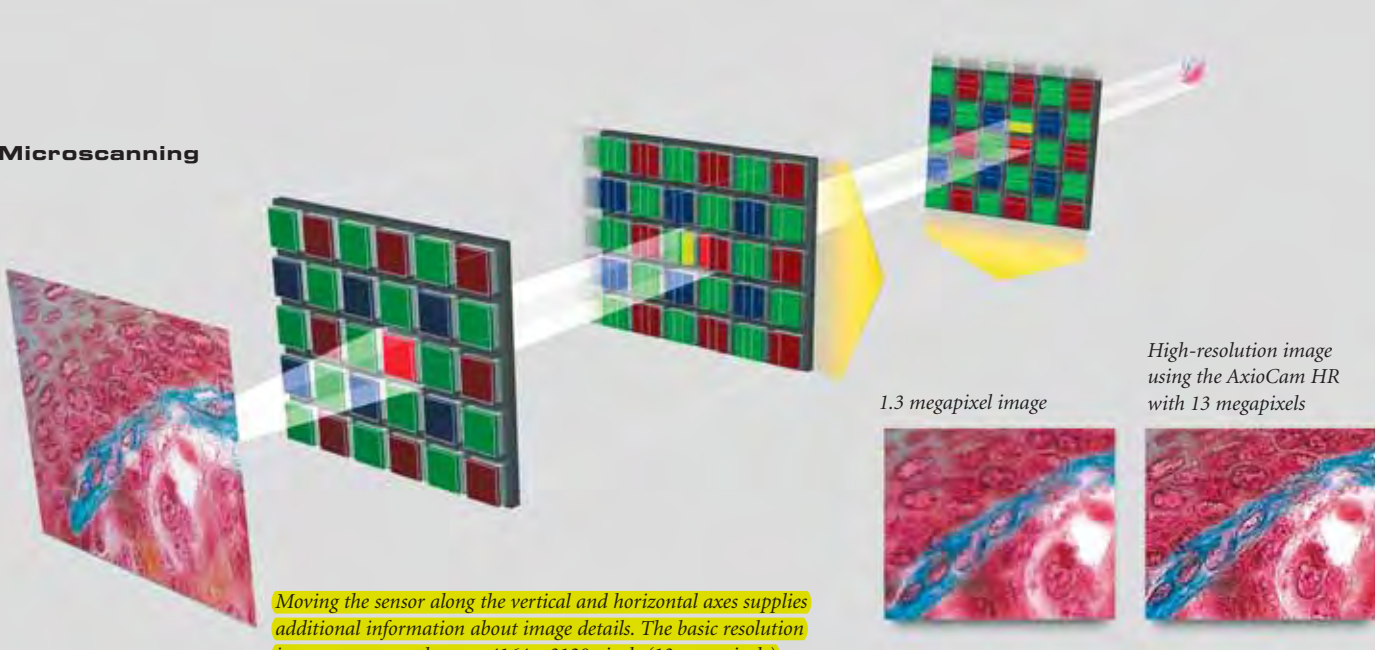
The diagram illustrates the color co-site sampling process. It shows a sequence of four stages from left to right. In the first stage, a grayscale image of a circuit board is shown. In the second stage, a sensor with a Bayer color filter (red, green, blue) is positioned over the image. In the third stage, the sensor is moved by one pixel distance. In the fourth stage, the sensor is moved again, showing how each pixel is scanned in all three colors. Below the diagram, two small images compare the results: one with chromatic aberrations at the edges and one with exact color reproduction.

During acquisition, the sensor is moved by the distance of one pixel. As a result of this every pixel is scanned at least once in all colors and the sharpness is therefore identical in all three color channels

Single shot image with chromatic aberrations at the edges

Color co-site Sampling with exact color reproduction

Microscanning



The diagram illustrates the microscanning process. It shows a sequence of four stages from left to right. In the first stage, a grayscale image of a biological specimen is shown. In the second stage, a sensor with a Bayer color filter is positioned over the image. In the third stage, the sensor is moved along the vertical and horizontal axes. In the fourth stage, the sensor is moved again, showing how additional information about image details is supplied. Below the diagram, two small images compare the results: a 1.3 megapixel image and a high-resolution image using the AxioCam HR with 13 megapixels.

Moving the sensor along the vertical and horizontal axes supplies additional information about image details. The basic resolution increases as a result up to 4164 x 3120 pixels (13 megapixels)

1.3 megapixel image

High-resolution image using the AxioCam HR with 13 megapixels

You will find an animated version of this illustration on our internet site.

AxioCam HR: Data and Facts

The data and facts apply equally to the AxioCam HRm and AxioCam HRC. Where different data apply, this will be pointed out.

| | | | |
|---|--|---|--|
| Sensor | AxioCam HRm and AxioCam HRC: Sony ICX 285, progressive readout, AxioCam HRC with RGB filter mask | | |
| Maximum camera resolution | 4164 x 3120 | | |
| CCD basic resolution | 1388 x 1040 = 1.4 megapixels | | |
| Pixel size | 6.45 µm (h) x 6.45 µm (v) | | |
| Sensor size | Chip area 8.9 mm x 6.7 mm, equivalent 2/3" | | |
| Spectral sensitivity | AxioCam HRm: approx. 350 nm-1000 nm with BK 7 protection glass AxioCam HRC: approx. 400 nm-700 nm with BG 40 IR barrier filter | | |
| Dynamic range | Typical > 1: 2200 at 25 Mhz at < 7.7 e readout noise Range > 1: 2500 at 12.5 Mhz at < 6.8 e readout noise | | |
| Full well | Typical 17.000 e | | |
| Dark current | Typical 0.7 e/pixels/s, dark current compensation for maximum low light performance at long exposure times | | |
| Resolution improvement | Microscanning technology enables a configurable image resolution beyond the basic sensor resolution | | |
| Selectable resolution | H x V | H x V (Microscanning Mode) | |
| AxioCam HRm | 276 x 208 Binning 5 x 5 346 x 260 Binning 4 x 4 462 x 346 Binning 3 x 3 694 x 520 Binning 2 x 2 1388 x 1040, Single Shot | 2776 x 2080 4164 x 3120 | |
| Selectable resolution | H x V | H x V (Microscanning Mode) | |
| AxioCam HRC | 276 x 208 Binning 5 x 5, RGB 346 x 260 Binning 4 x 4, B/W 462 x 346 Binning 3 x 3, RGB 694 x 520 Binning 2 x 2, B/W 1388 x 1040, Single Shot | 1388 x 1040 Color co-site Sampling 2776 x 2080 Color co-site Sampling 4164 x 3120 Color co-site Sampling 4164 x 3120 Fast Scan | |
| Live image frame rates | H x V | Mode/Binning | Max. frame rate (25 MHz)* |
| AxioCam HRm | 1388 x 1040 694 x 520 462 x 346 | Slow/1 Middle/2 Fast/3 | 12 images/s 21 images/s 31 images/s |
| Live image frame rates | H x V | Mode/Binning | Max. frame rate (25 MHz)* |
| AxioCam HRC | 1388 x 1040 460 x 344 276 x 208 | Slow/1 Middle/3 Fast/5 | 12 images/s 26 images/s 33 images/s (Binning in color) |
| Fast readout modes in AxioVision module | <ul style="list-style-type: none"> Five preloadable exposure time parameters in camera head enable especially high speed multichannel acquisition | | |
| Fast Acquisition | <ul style="list-style-type: none"> Continuous mode enables fast time lapse acquisition Overlapping exposure and readout enables maximum frame rates for time lapse images and minimizes acquisition time for microscanning imaging | | |

| | |
|--------------------------------|--|
| Hard disk recording | Inline recording of image data directly to hard disk at all speeds with AxioVision modul Fast Acquisition available |
| Readout of sub frames (ROI) | Random definition of regions of interest (ROI) on the sensor enables further increase of achievable frame rates |
| Signal amplification | Analog: 2x, digital 32x |
| Digitization | Two switchable readout speeds offer different depth of digitization High Quality: 14 bit/12.5 Mhz and High Speed: 12 bit/25 Mhz |
| CCD cooling | Single stage Peltier cooling, regulated |
| Interface | FireWire IEEE 1394a (400 megabits/s) |
| Range of integration time | 1 ms up to 600 s |
| Signal output connectors | 2x TTL-Out: exposure time, readout time (i.e. for driving external electric shutters), 1x Trigger-In to start an acquisition |
| Optical interface | C-Mount, max. 5 mm free back focal depth |
| Max. file size per image | Approx. 78 MB with 4164 x 3100 pixels at 14 bit (monochrom) and 3 x 14 bits (color) |
| Operating system | Microsoft® Windows 2000 Professional SP4, Microsoft® Windows XP Professional SP2, Microsoft® Windows Vista Ultimate |
| Housing | Blue anodized aluminum, with cooling fins, 1/4" connection for tripod mount, 11 cm x 8 cm x 6.5 cm, 500 g |
| Registration | CE, cUL |
| Power supply | 10-33 V, DC, 5W, power supply provided by FireWire bus (external power supply only for Notebook operation required) |
| Ambient conditions (operation) | +5° ... +35° Celsius, 10% ... 80% relative humidity, no condensation, free air circulation required |
| Ambient conditions (storage) | -15° ... +60° Celsius, 90% relative humidity at 40° Celsius, 80% relative humidity at +20° Celsius, no condensation |
| Order number | AxioCam HRm: 426511-9901-000 AxioCam HRC: 426510-9901-000 |

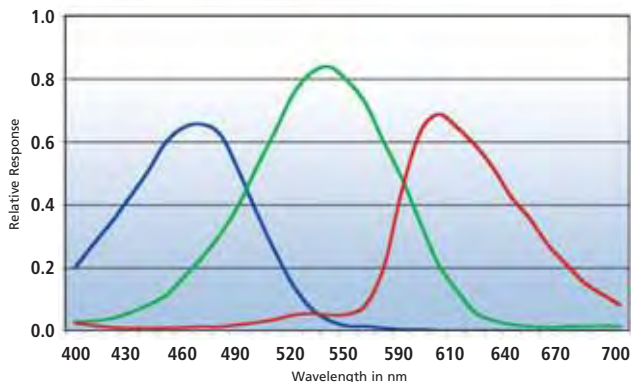
All specifications are subject to change without notice.

* Frame rates depend on exposure time, readout mode and PC hardware

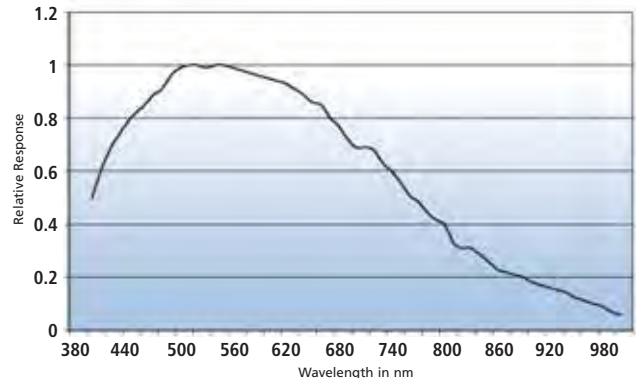
Using Microscanning it is possible to generate high-resolution images by combining several individual images for which the sensor has been shifted by extremely small distances (subpixel dimensions) in each case.

Color co-site Sampling allows optically identical resolution in each of the three RGB color channels. Color interpolation does not take place.

Relative Spectral Sensitivity AxioCam HRC with BG 40 IR-Filter



Relative Spectral Sensitivity AxioCam HRm



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Information subject to change.
Printed on environmentally friendly
paper bleached without chlorine.
48-0059/e – printed 03.08