

Specifications	CC-12	F-View II	ColorView I	ColorView II	ColorView III
Observation methods	brightfield, darkfield, phase contrast, DIC, fluorescence, polarization	brightfield, darkfield, phase contrast, DIC, fluorescence, polarization	brightfield, darkfield, phase contrast, DIC, fluorescence, polarization	brightfield, darkfield, Phasenkontrast, DIC, bright fluorescence, polarization	brightfield, darkfield, Phasenkontrast, DIC, bright fluorescence, polarization
Application fields	medicine, biology, cytology, pathology, histology, materials science, industry, semiconductor	medicine, biology, cytology, materials science, industry, semiconductor	medicine, biology, cytology, pathology, histology, materials science, industry, semiconductor	medicine, biology, cytology, pathology, histology, materials science, industry, semiconductor	medicine, biology, cytology, pathology, histology, materials science, industry, semiconductor
Applications	fluorescence, time-lapse, fast image acquisition, digital documentation, screening	fluorescence, time-lapse, fast image acquisition, digital documentation, screening	digital documentation, time-lapse, screening	fluorescence (bright), time-lapse, digital documentation, screening	fluorescence (bright), time-lapse, digital documentation, screening
Resolution	1376 x 1032 pixels	1376 x 1032 pixels	2080 x 1544 pixels	2080 x 1544 pixels	2576 x 1932 pixels
(Color) binning	2x, 4x	2x, 4x, 8x	2x, 3x	2x, 3x	2x, 4x, 6x
Chip size	10.2 x 8.3 mm ² (2/3")	10.2 x 8.3 mm ² (2/3")	8.1 x 6.64 mm ² (1/1.8")	8.1 x 6.64 mm ² (1/1.8")	9.74 x 7.96 mm ² (2/3")
Pixel size	6.45 x 6.45 μm ²	6.45 x 6.45 μm ²	3.45 x 3.45 μm ²	3.45 x 3.45 μm ²	3.4 x 3.4 μm ²
Effective area	8.9 x 6.7 mm ²	8.9 x 6.7 mm ²	7.1 x 5.3 mm ²	7.1 x 5.3 mm ²	8.8 x 6.6 mm ²
Pixel clock rate	20 MHz	20 MHz	20 MHz	20 MHz	20 MHz
Dynamic range	3 x 12 bits	12 bits	3 x 12 bits	3 x 12 bits	3 x 12 bits
Exposure times	100 μs - 160 s	100 μs - 160 s	100 μs - 10 s	100 μs - 160 s	1 ms - 160 s
Frame rates (live)	12,4 fps @ full resolution 22,9 fps @ 2x binning 39,3 fps @ 4x binning	12,4 fps @ full resolution 22,9 fps @ 2x binning 39,3 fps @ 4x binning 72,3 fps @ 8x binning	5,6 fps @ full resolution 11,1 fps @ 2x binning 29,5 fps @ 3x binning	5,6 fps @ full resolution 11,1 fps @ 2x binning 29,5 fps @ 3x binning	3,8 fps @ full resolution 7,3 fps @ 2x binning 14,4 fps @ 4x binning 19,2 fps @ 6x binning
Performance increase via Fast-SnapShot routine *,**	275%	350%	200%	200%	175%
Live-image transfer via LAN *	yes	yes	yes	yes	yes
Cooling	Peltier, 10° @ 25°C ambient	Peltier, 10° @ 25°C ambient	no	Peltier, 10° @ 25°C ambient	Peltier, 10° @ 25°C ambient
Temperature control	CCD chip, housing	CCD chip, housing	CCD chip, housing	CCD chip, housing	CCD chip, housing
Temperature stability	yes, +/- 0.5°C	yes, +/- 0.5°C	yes, +/- 0.5°C	yes, +/- 0.5°C	yes, +/- 0.5°C
Partial read-out	no	no	no	yes	yes
B/w modus	no	no	yes	yes	no
External trigger function (optional)	yes	yes	no	no	no
Read-out noise	< 10e ⁻	< 10e ⁻	< 10e ⁻	< 10e ⁻	< 10e ⁻
Non-Linearity	< 0.6%	< 0.6%	< 0.6%	< 0.6%	< 0.6%
Anti-Blooming	> 300	> 300	> 300	> 300	> 300
Dimensions	60 x 60 x 60 mm ³	100 x 85 x 50 mm ³	100 x 85 x 50 mm ³	100 x 85 x 50 mm ³	100 x 85 x 50 mm ³
Weight	285 g	570 g	570 g	570 g	570 g
Camera mount	standard-C-Mount	standard-C-Mount	standard-C-Mount	standard-C-Mount	standard-C-Mount
PC interface	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)	FireWire™ (IEEE 1394)
Operating system	Windows 2000 / XP	Windows 2000 / XP	Windows 2000 / XP	Windows 2000 / XP	Windows 2000 / XP
analySIS® version	analySIS® 3.2 or higher	analySIS® 3.2 or higher	analySIS® 3.2 or higher	analySIS® 3.2 or higher	analySIS® 3.2 or higher

Note: * The Fast-SnapShot functionality and the Live-image transfer via LAN are only available with analySIS® 3.3 or higher and in combination with cameras from Soft Imaging System.
** Increase of single image acquisition rate compared to standard snapshot routine within following applications: analySIS® stage manager, analySIS® automater, analySIS® wellNavigator, analySIS® filterInspector, analySIS® waferInspector. The resulting frame rate using Fast-SnapShot depends on how PC is configured.

Digital Solutions for Imaging and Microscopy
Soft Imaging System 

RS/MK/11-03_CCD-Cameras_e

About Soft Imaging System

Soft Imaging System specializes in the field of image-analysis hardware and software systems. This includes the development, marketing and sales of the following: image analysis, image processing, image archiving systems and image analysis devices. Consultation, system integration, installation and user training are also offered.

Soft Imaging System is active around the globe and currently has offices in Europe, the United States, Asia and Australia along with a worldwide network of local sales partners. We particularly emphasize efficient digital integration of all components (hardware and software). The solutions we offer are especially in demand for applications in the quality control and assurance fields, the semiconductor industry and the materials and life sciences.



Soft Imaging System has its headquarters in Münster, Westphalia, Germany.

Alongside our printed brochures we have multimedia brochures on the following topics:

- analySIS® – TEM software and hardware solutions
- analySIS® – SEM software and hardware solutions
- analySIS® – the materials analysis series
- analySIS® – cell and molecular biology solutions

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Digital Solutions for Imaging and Microscopy
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Always the right choice

CCD-Cameras

Digital imaging cameras
for light microscopy
from Soft Imaging System



Exploit the advantages of working digitally. Soft Imaging System is a leader in imaging ready to provide you cutting-edge camera technology. Make the most of today's camera technology with our well-coordinated comprehensive systems and image-analysis control software.

We offer individual solutions for your applications – from image acquisition with the right camera, to the processing and analysis of images as well as archiving and documentation.

Turn your visions into realities

Digital Solutions for Imaging and Microscopy
Soft Imaging System 

Digital imaging cameras for light microscopy from Soft Imaging System

Soft Imaging System offers a sophisticated portfolio of digital color and monochrome cameras for the field of light microscopy. We are able to provide you with the right camera whether you require a highly sensitive fluorescence camera or a macro acquisition solution for your application.

However, we offer much more than just top quality images. The control software for all of our digital cameras is completely integrated with the analySIS® software environment. This offers the user: perfect images at the click of a button, direct transferral of images via LAN to the internet, image processing, image analysis, archiving and report generation following acquisition.

Properties that reflect excellence

Our digital cameras for light microscopy offer what research, development and quality assurance demand today:

- high resolution
- rapid frame rates
- high sensitivity
- excellent signal-to-noise ratio
- broad dynamic range
- partial read-out
- external trigger functionality
- easy installation on C mount adaptor
- the latest design
- optimal price-performance ratio

User friendly

With the suitable camera and analySIS® in hand, you can take full advantages of today's digital technology. Perfect acquisitions are automatic because all cameras support:

- numerous real-time functions at acquisition (eg, shading correction)
- real-time white balance
- interactive onscreen focusing
- automatic image enhancement
- online measurement and labeling
- live-image transmission via LAN*
- and automatic image calibration

Full integration

All cameras are operated through analySIS®. The integration in this image analysis software environment provides users with a wide array of advanced functions. From the very start, you work effectively, reduce expenses and optimize workflows. Working with analySIS® means doing the following very conveniently:

- acquiring images
- evaluating and analyzing images
- archiving images and other data
- and creating reports

An exciting and perfectly coordinated comprehensive system.



Two essential characteristics of our CCD cameras

Pixel size and resolution

The 5 MegaPixel ColorView III is the highest resolution camera in our current range of products. Its CCD chip has over 2576 x 1932 pixels. The size of the pixels is 3.4 x 3.4 µm². Additionally, we offer the cooled and the non-cooled models of a 3 MegaPixel color camera (2080 x 1544 pixels, 3.45 x 3.45 µm²) as well as the monochrome and a color variety of a camera with 1.3 MegaPixels (1376 x 1032 pixels, 6.45 x 6.45 µm²) to choose from.

The cameras differ primarily in their signal sensitivity and image resolution. The 5 MegaPixel CCD chip offers superior resolution while the 1.3 MegaPixel cameras are significantly more sensitive due to the larger size. For brightfield applications or very high-intensity fluorescing samples the high-resolution cameras are most suitable. If, however, you are working with low-intensity fluorescences, a monochrome camera is preferable (eg, the F-View II).

■ CC-12

Superior image quality, external trigger function and long integration times - these are just a few of the many properties this Peltier-cooled color camera offers.

The CC-12 conceals a 1376 x 1032 pixel CCD chip. Every color channel offers 12 bits. In the 2x binning mode the camera provides more than 22 frames per second. This makes the CC-12 ideal for applications that require fast image acquisition. In addition, the high image frequency can be used to focus samples or locate areas of interest directly on the PC screen.

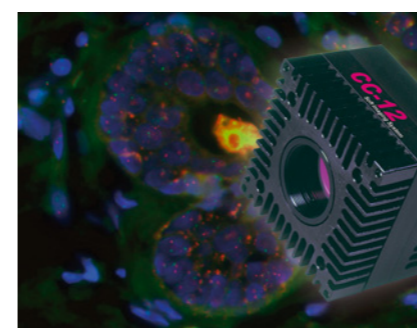
The superior characteristics offered by this CCD chip in conjunction with the Peltier cooling ensure color images rich in detail and contrast with extraordinarily low noise. Extremely

long exposure times up to 160 seconds can be set. This means that the camera can be used to detect signals of weak intensity as is the case in the usual fluorescence applications.

Recommended applications: fluorescence applications, brightfield applications

Acquisition

All cameras transfer images from the camera to the PC via a FireWire™ interface (IEEE 1394). The accompanying board and cable are included with every camera. Special search modes and the partial read-out mode guarantee fast frame rates which greatly simplify the focusing and locating of specific areas of a specimen onscreen.



- Resolution: 1376 x 1032 pixels
- Binning: 2x, 4x
- Dynamic range: 3 x 12 bits
- Exposure time: 100 µs – 160 sec.
- Frame rate: > 22 fps @ 2x binning (live)
- Cooling: Peltier cooled

■ F-View II

The F-View II offers a synthesis of properties such as required in the field of fluorescence microscopy: high resolution, extreme sensitivity, cooling, variable exposure times, external trigger function.

The F-View II has a 1376 x 1032 pixel CCD chip with a bit depth of 12 bits. The 2x binning mode enables frame rates of more than 22 images per second. This makes it easier to focus and to locate areas of interest on samples while conserving highly sensitive fluorescence samples. The high-resolution mode is ideal for acquisition.

The F-View II is extremely sensitive and supports long integration times of up to 160 seconds. In combination with the camera cooling, these characteristics are ideal requirements for making perfect acquisitions of low-intensity fluorescences. In the live mode, the F-View II can superimpose a color LUT

onto a monochrome b/w image in accordance with the fluorescence emission. Single monochrome fluorescence images can be combined into one high-resolution, color, fluorescence image via the analySIS® add-in mFip.

Recommended applications: acquire low intensity fluorescences, brightfield applications



- Resolution: 1376 x 1032 pixels
- Binning: 2x, 4x, 8x
- Dynamic range: 12 bits
- Exposure time: 100 µs – 160 sec.
- Frame rate: > 22 fps @ 2x binning (live)
- Cooling: Peltier cooled

■ ColorView I

The non-cooled ColorView I offers high resolution, fast frame rates, high sensitivity and an actual color binning (where images remain in color).

The CCD chip in the ColorView I has 2080 x 1544 pixels and a bit depth of 12 bits per color channel. The camera supports various frame rates. The 3x color binning mode (688 x 514 pixels) offers close to 30 images per second. This means searching and focusing can be done within the entire image - very convenient. In the highest resolution level of 2080 x 1544 pixels, the camera provides a frame

rate of more than 5 images per second. Alongside color acquisition, users also have a black and white mode available to them.

This camera's control software is completely integrated with analySIS® as well. This makes real-time functions such as automatic contrast adjustment and enhancement available, ensuring the best possible images even with sub-optimal illumination.

Recommended applications: brightfield applications, digital documentation, macro acquisitions



- Resolution: 2080 x 1544 pixels
- Binning: 2x, 3x
- Dynamic range: 3 x 12 bits
- Exposure time: 100 µs – 10 sec.
- Frame rate: > 29 fps @ 3x binning

■ ColorView II

In comparison with the ColorView I, the ColorView II offers Peltier cooling and partial read-out. Due to its color fidelity the ColorView II is ideal for use in pathology or histology. It is also suitable for high-intensity fluorescences.

The compact and elegant housing conceals a 2080 x 1544 pixel CCD chip with 12 bits per channel. Just like the ColorView I, the ColorView II also offers various frame rates for working within the entire field of view. The partial read-out mode simplifies focusing through an extremely high frame rate. A segment of the entire field of view is defined by the user and only this image segment is read out by the camera. The additional Peltier cooling guarantees perfect color images that are rich in contrast, color fidelity and have extremely low noise. Alongside high resolution color acquisitions, the ColorView II also offers acquisition of monochrome images.

All control functions are operable via analySIS® with the ColorView II as well. One advantage this offers is to ensure the exploitation of the dynamic range, independent of what the current acquisition parameters are.

Recommended applications: brightfield applications, digital documentation, fluorescence



- Resolution: 2080 x 1544 pixels
- Binning: 2x, 3x
- Dynamic range: 3 x 12 bits
- Exposure time: 100 µs – 160 sec.
- Frame rate: > 29 fps @ 3x binning
- Cooling: Peltier cooled

■ ColorView III

The ColorView III's high resolution is the distinguishing feature of this 5 MegaPixel color camera. In addition, this Peltier-cooled camera offers a wide dynamic range along with fast frame rates in the color binning and in the partial read-out modes.

The 2576 x 1932 pixel CCD chip used in the ColorView III offers 12 bits per channel. Variable exposure times between 1 ms and 160 s offer a broad range of application possibilities both in the materials sciences as well as in biomedicine, such as when working with high-intensity fluorescences. The color fidelity, superior contrast and extraordinary signal-to-noise ratio of the camera are particularly worth emphasizing. Installation is guaranteed easy using the standard C-mount adaptor.

Complete control of the ColorView III is also available via analySIS®. Despite the high number of pixels, partial read-out and the various supported binning modes ensure that users can work with a high frame rate. The focusing and locating of areas of interest on the specimen on the PC screen is also greatly simplified.

Recommended applications: brightfield applications, digital documentation, fluorescence



- Resolution: 2576 x 1932 pixels
- Binning: 2x, 4x, 6x
- Dynamic range: 3 x 12 bits
- Exposure time: 1ms – 160 sec.
- Frame rate: > 19 fps @ 6x binning
- Cooling: Peltier cooled