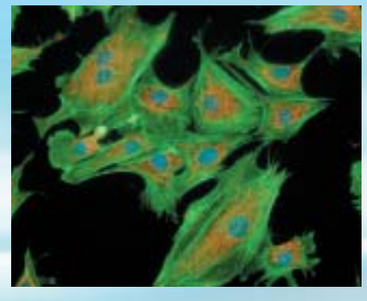
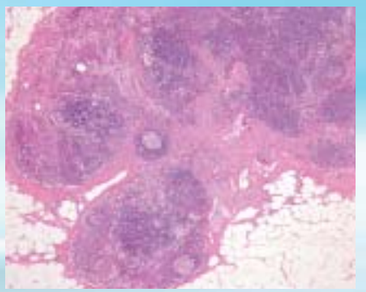
High-Definition Cooled Color Digital Camera

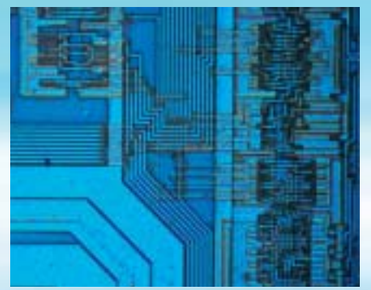
DXM1200C

Cooling mechanism reduces thermal noise, leading to greater clarity and higher signal to noise image acquisition

The high-definition DXM1200C digital camera is the perfect choice for top-of-the-line microscopy image documentation. The camera's cooling mechanism successfully reduces thermally induced CCD noise, and provides an increased dynamic range of low light level imaging of fluorescence, darkfield, or DIC images with greater clarity. Image resolution has been upgraded as well, with super high 12.6-mega output pixels, thanks to Nikon's original pixel stepping technology. The DXM1200C also provides superb sensitivity that is ideal for dark specimen imaging, with a high-speed live image display at 15fps max. frame rate, coupled with full function control and capture software. Designed for large-volume imaging applications—the DXM1200C dynamically meets today's demands for high-definition color fluorescence documentation.







Configured with microscope Eclipse 80i and DIH-M

Configured with inverted microscope Eclipse TE-2000

Configured with industrial microscope Eclipse LV100D

*Above configurations are examples only. Actual configurations may differ.

Cooling mechanism cuts noise

The Peltier device cooling mechanism maintains the temperature of CCD at approximately 20°C below the pre-cooled temperature. As a result, heat-induced noise—which would otherwise occur during long exposures is significantly reduced, so even weak fluorescence and darkfield images are captured clearly.

Crisp images with 12.6-mega output pixels

Nikon's original pixel stepping technology has realized a super high resolution of 12.6-mega output pixels (4116 x 3072 pixels)—1.07 times greater than our previous models. The resulting images are exceptionally sharp, and the high-definition image files created can be printed in large format—a valuable requirement for today's demanding research digital imaging systems.

Superb sensitivity suited for dark specimen capture

Nikon's high S/N digital circuit technology enables a greater range of image sensitivity, performance and image capture. Thanks to its wide exposure latitude and improved dynamic range, a wide range of light intensities can be observed and digitally stored.

Smooth live image display

Images are transferred to the PC monitor at a rapid 15 fps max. speed for smooth, natural display of live image observations. Along with auto-exposure determination, this makes it easy to adjust focus, observe, and shoot while reducing the chance of photobleaching due to the reduction in the overall imaging workflow process.

Upgraded Overlay (Merge)—handy for multistained specimen capture

The DXM1200C's Overlay (Merge) feature has greater capabilities than ever before. "Stack RGB" separates the RGB components from the original image and layers them. "Merge Channel" takes the RGB set components from the original image, allocates the designated colors, then overlays. The different colors can be added or deleted independently. Merge Channel colors can be easily selected from the control software.

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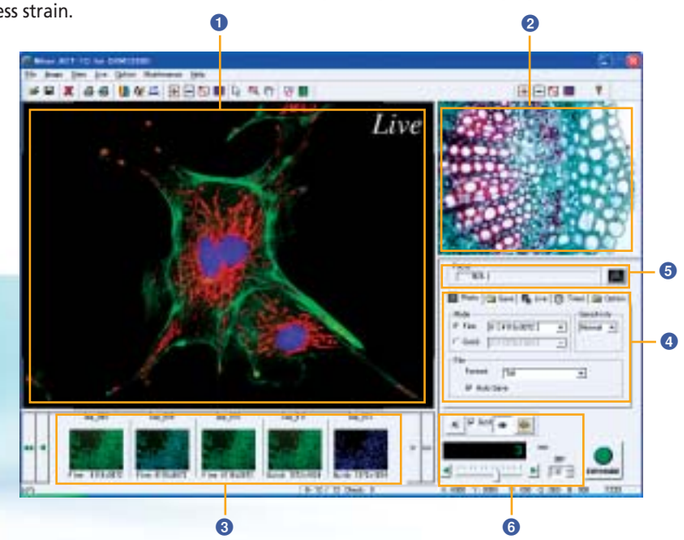
Advanced, user-friendly DXM1200C control software ACT-1C

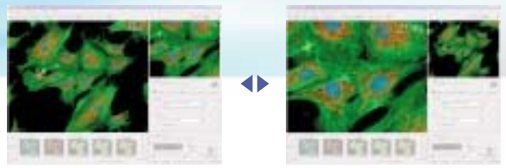
Streamlined imaging

Preview of the live image ❶, image just taken ❷, thumbnail images ❸, and shooting parameter panel ❹ are all included on a single screen, providing an overview of the workflow. Prolonged, high-volume imaging can be easily accomplished with minimum fatigue and less strain.



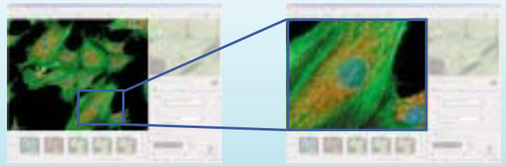
Live & captured images ❶ ❷

Position of the live image and captured image can be switched (between the large display and small) at the click of a button.



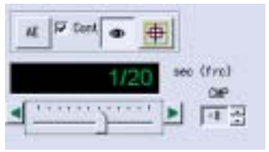
Either image can be enlarged to full screen (maximum frame rate 12 fps in this mode).

Live image can be zoomed up to 800%, facilitating easy focusing.



Exposure metering ❻

Auto exposure can be used by setting the metering area and size. Two exposure modes are available: metering is continuously performed or metering ends once exposure is obtained.



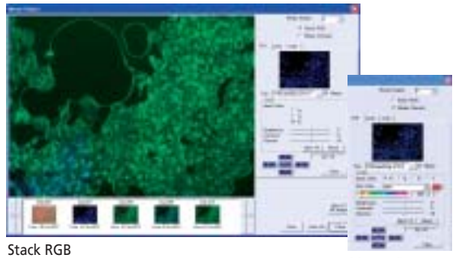
Exposure time (1/16000 to 60 sec.) can be manually set either by entering the value in the box or moving the slider. Slider-based exposure times can be arbitrarily added or deleted. Exposure time can be also selected in msec or µsec units according to your needs.

Focus indicator ❺

Indicates focusing status.

Image overlay (merge)

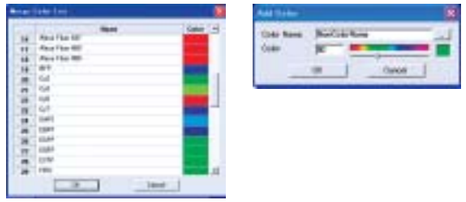
- Stack RGB: takes the set components from the original image and overlays them.



Stack RGB

Merge Channel

- Merge channel: takes the set components from the original image, allocates the designated colors for each channel, then overlays. The default colors red, green, blue and white can be added or deleted.

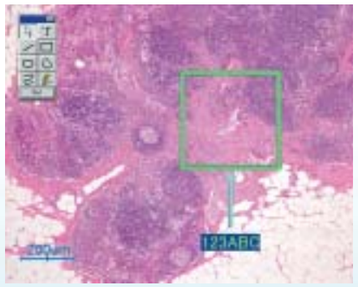


Black balance

Perfect blacks can be obtained by setting the RGB color levels to zero.

Scale display & diagram/text imprint

A scale can be displayed on captured and live images, while text can be added to and graphics drawn on the captured image.



Launcher

Using the launcher of ACT-1C, images can be exported to other image analysis software.

Shooting parameters ❹

• Imaging mode and frame template

- Imaging mode: Fine or Quick
- Image size: 10 types (Fine), 4 (Quick)

• Optional settings

- Live image "enhanced"
- Shading correction
- CCD cooling On/Off
- Auto printing after exposure

• Tone

Image brightness is selectable from Standard, Bright, Slightly Bright and Dark.

• Save

Auto processing for image file naming, folder generation, sort, and save are all set simultaneously prior to imaging.

• Shooting interval

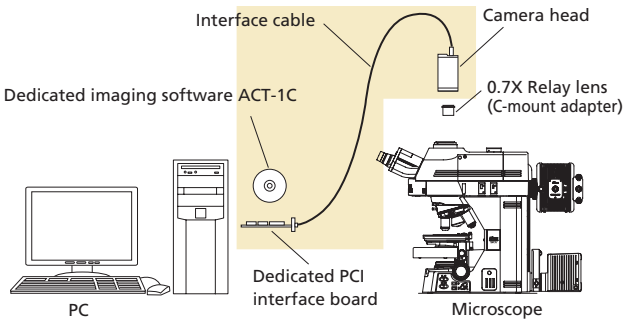
Intervals during auto shooting can be set from 5 seconds to approx. 100 hours.

Specifications

Output pixels	12.6-mega pixels (max. in Fine mode), 1.4 -maga pixels (max. in Quick mode)
CCD	2/3-in. high-density CCD; total number of pixels: 1.5 mega (effective 1.45 mega)
CCD cooling	Approx. 20℃ below pre-cooled temperature; On/Off; Peltier device; Radiator; Cooling fan
Quantization	12-bit A/D conversion
Lens mount	C-mount
Shooting mode	Fine (10 types): 4,116 x 3,072 pixels max. to 640 x 480 pixels min. Quick (4 types): 1,372 x 1,024 pixels max. to 640 x 480 pixels min.
Live image frame rate	15fps (686 x 512 pixel display with full screen size)
Sensitivity setting	3 levels: Normal (Equivalent to ISO 300: Standard), High (Equivalent to ISO 600) and Max (Equivalent to ISO 1200).
Exposure control	AE (Continuous, One push)
Metering area	Size/position can be set at discretion
Exposure correction	±8 levels
Gamma setting	4 levels
Auto white balance	Can be preset by selecting a rectangle
Exposure time	1/16,000 to 60 sec.
Image processing	Level adjustment; Color adjustment; Outline emphasis; Cropping; Uneven illumination correction; File overlay merge
Data saving format	BMP, JPEG (3 types compression), TIF (uncompressed), JPEG2000 (reverse compression)
Print	Print size designation; Tiling print for multiple images
ACT-1C function	Focus indicator (displays focus situation in real time); Real time level meter (displays horizontal direction profile in each RGB, dynamic range effective setting); Scheduler (interval shooting); Annotation (diagram, text, scale drawing); Black balance acquisition (noise level correction); Automatic save; Zoom display
Interface	PCI2.2 bus, Bus master transfer method
Power source	DC5V±10%, 400mA (Supplied from connecting cable)
Consumption power	7W
Dimensions	56 (W) x 56 (D) x 138 (H)mm excluding protrusions
Interface cable	3m
Weight (without battery)	Approx. 600g
Operating temperature/humidity	Temperature: 0 to 40℃ Humidity: maximum 85% (without condensation)
Accessories	Interface cable, Dedicated imaging software ACT-1C, Dedicated PCI interface board
Optional accessories	Wide field, Low gravity point 0.7X relay lens

System Configuration

DXM1200C Digital Camera System



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Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. November 2005

WARNING TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

* Monitor images are simulated.

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