



Digital Microscope

# COOLSCOPE

All-in-one digital microscope that transcends  
the current concept of a microscope



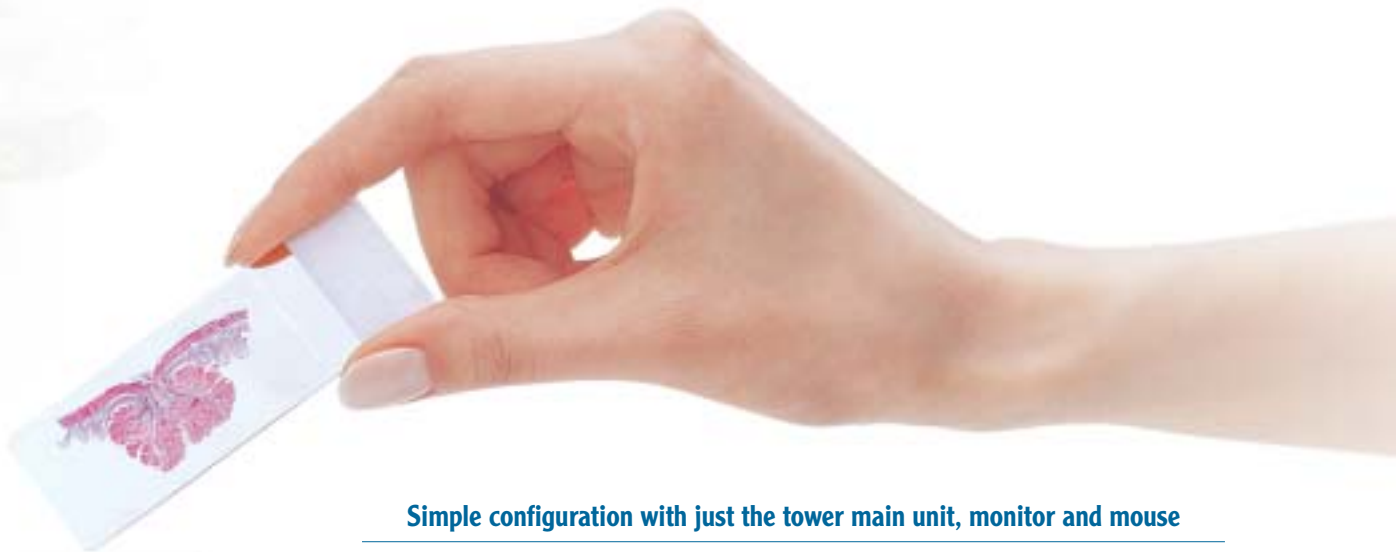
Try our virtual demo at:  
[www.coolscope.com](http://www.coolscope.com)



**Perfection in a single package, the COOLSCOPE is an all-in-one digital microscope that defies tradition to open up new horizons in microscopy. The ultimate in user-friendly design, it provides a simple platform in which all operations are seamlessly performed with simple mouse clicks.**

Gone are the days of researchers stooped over the eyepieces and struggling with complicated settings. Everything, from observation through image capturing up to data communications over the network, is operated by a series of simple mouse clicks allowing you to concentrate on the image on the screen. Along with its sleek tower main unit, the COOLSCOPE is a digital enabled microscope that completely transcends the concept of a traditional microscope.





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### Simple configuration with just the tower main unit, monitor and mouse

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In an all-in-one design, the COOLSCOPE combines the functions of a microscope and a digital camera into one single integrated unit. All that is needed to start the microscope is just a push of the power switch. Neither equipment setup nor optical adjustment is necessary. COOLSCOPE produces perfect images everytime.

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### Once the slide glass preparation is loaded, simple mouse clicks do the rest

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Simply load the slide glass preparation onto the tray and click the mouse to retract it. That's all you need to do to view the macro and micro images simultaneously. Aperture and brightness are automatically adjusted, while stage movement, focusing, and magnification changeover are all digitally motorized. Since everything is operated with the mouse, you can concentrate on the monitor screen from start to finish. This means the COOLSCOPE is comfortable, easy to use, and you are more efficient.

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### High-definition images viewed on screen

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The COOLSCOPE delivers high-definition SXGA-quality images that are easily viewed on the monitor screen or through a projector.

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### LED illumination

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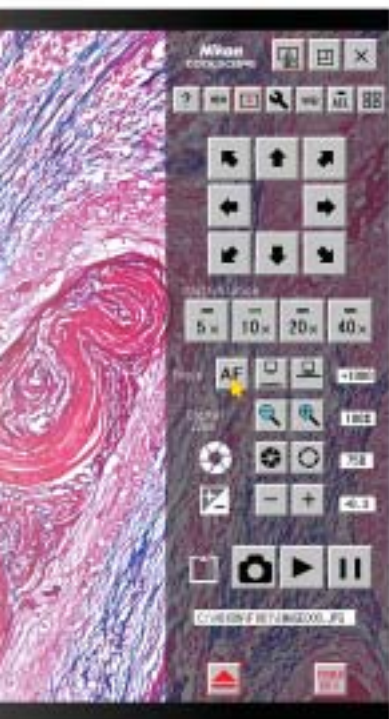
For the light source, it uses an LED illuminator that provides bright, uniform and cool illumination at a constant color temperature. LED illumination provides longer service life, while minimizing the generation of heat to keep the system cool and running stably.

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### Network capable

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With a network interface and web server function, the COOLSCOPE can be operated from a PC in a different location within the network. Special software is not necessary to transfer images and share them.



Example of the full screen

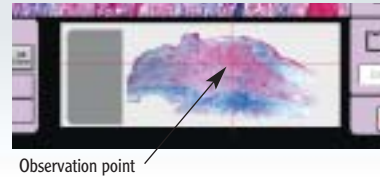


# Incorporating unique features transcending those of a traditional microscope



## Macro image display enables a view of both the whole specimen and the observation point

A macro image covering the whole area of the specimen is displayed below the micro image, with the point of observation indicated by crosshairs .

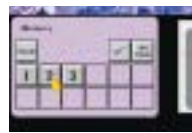


## Image of previous observation points is instantly recalled with a click

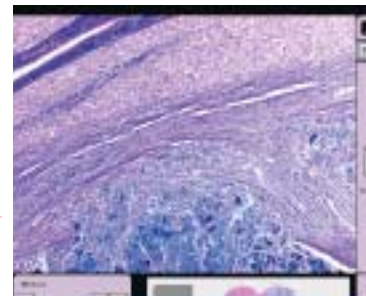
When you click the memory (✓) button during observation, the image of the point you are viewing at that time is stored in memory (retaining its magnification, aperture and brightness), and a number is imprinted on the macro image. Therefore, previous observation data is easily recalled by clicking the numbered button even if you change the point of observation and other conditions. The microscope data is stored on a CompactFlash card, so you can recall it anytime, even if you turn off the power or change the specimen.



Image of the observation point can be stored in memory (retaining its observation conditions) with a number imprinted on the macro image.



Click the numbered button.



The image of that point is recalled, retaining its original observation conditions.

## Point of interest is centered with a click on the mouse

Either in micro or macro image, you can quickly move your point of interest to the center of the screen—just by moving the cursor and clicking on it.



Click the point of interest on the micro image.



Click the point of interest on the macro image.

## Images can be remotely observed and equipment controlled

It is possible to observe the images and operate the COOLSCOPE from a networked PC via a standard web browser. Captured images can be stored in any of the networked PCs as well.



# Intuitive GUI enables comfortable operation of all controls; from observation, image capturing and even image sharing

## COOLSCOPE Main Screen and Controller

**Controller**

- Enlargement of macro image
- Changeover between multi- and full-screen displays  
Switches the display format of the micro image between multi-screen display and full-screen display in which the micro image is displayed over the entire screen.
- Menu OFF  
(For full-screen display)
- Help display
- Scale display
- Observation point display  
Point being observed is indicated with crosshairs on the macro image.
- Camera/network settings
- White balance
- AE lock
- Thumbnail display
- Moves the observation point of the specimen
- Magnification changeover
- Auto focus
- Focus adjustment  
Used to adjust focus manually.
- Electronic zoom  
Digitally enlarges the micro image up to 16X.  
(For full-screen display)
- Aperture adjustment
- Brightness adjustment
- Freeze image/return to live image
- Display of images stored on CompactFlash card
- Display of file names
- Power OFF
- Save  
Captures the image being observed with a click of this button.
- Eject/retract slide preparation tray
- Display of storage location

**Micro image**

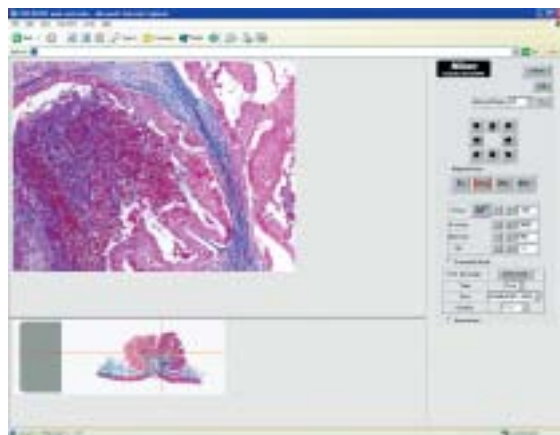
Example of the multi screen

**Memory section**

- Recall observation conditions from a CompactFlash card.
- Clearing of all stored observation conditions
- Storage of observation conditions in memory  
Stores for quick recall the position of the micro image's X,Y,Z coordinates of the point being observed in memory (retaining its magnification, aperture, and brightness) and assigns a number.
- Recall of observation conditions (1-12)  
Instantly recalls observation conditions of the numbered observation point.

**Macro image**

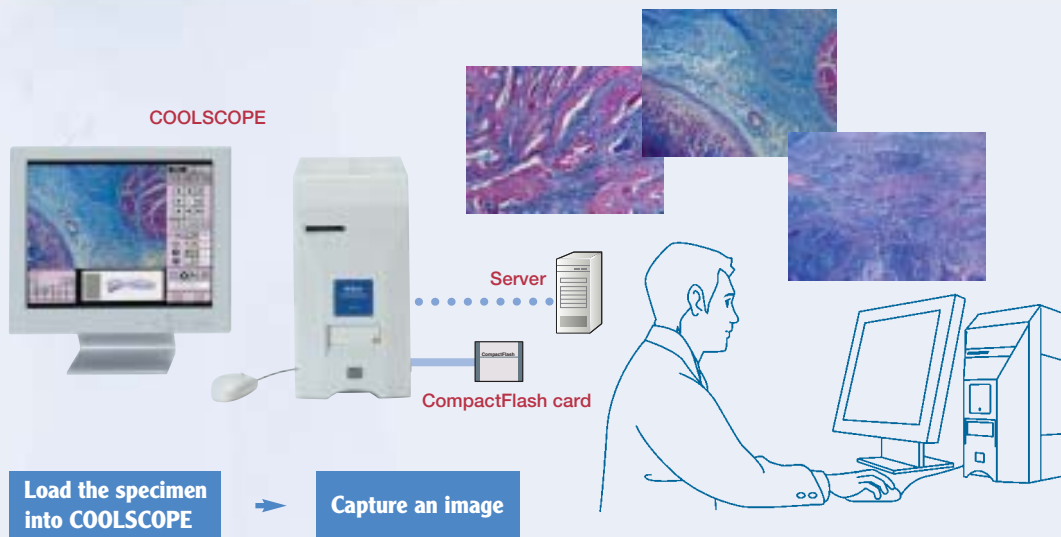
## Web browser screen on a PC



- COOLSCOPE can be controlled from a networked PC  
(Operations that can be accessed)
- Moving the specimen's observation point
  - Magnification changeover
  - Auto focus/focus adjustment
  - Electronic zoom
  - Aperture adjustment
  - Brightness adjustment
  - Download of images
  - White balance

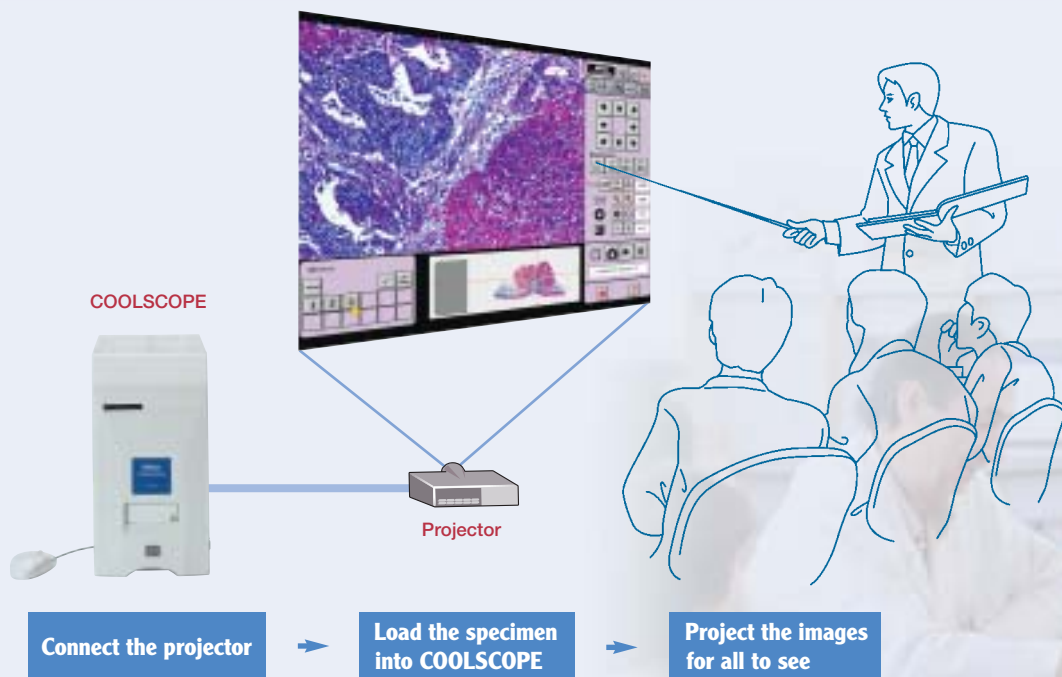
# COOLSCOPE completely transforms the way a microscope is used

## Collection of microscopic images



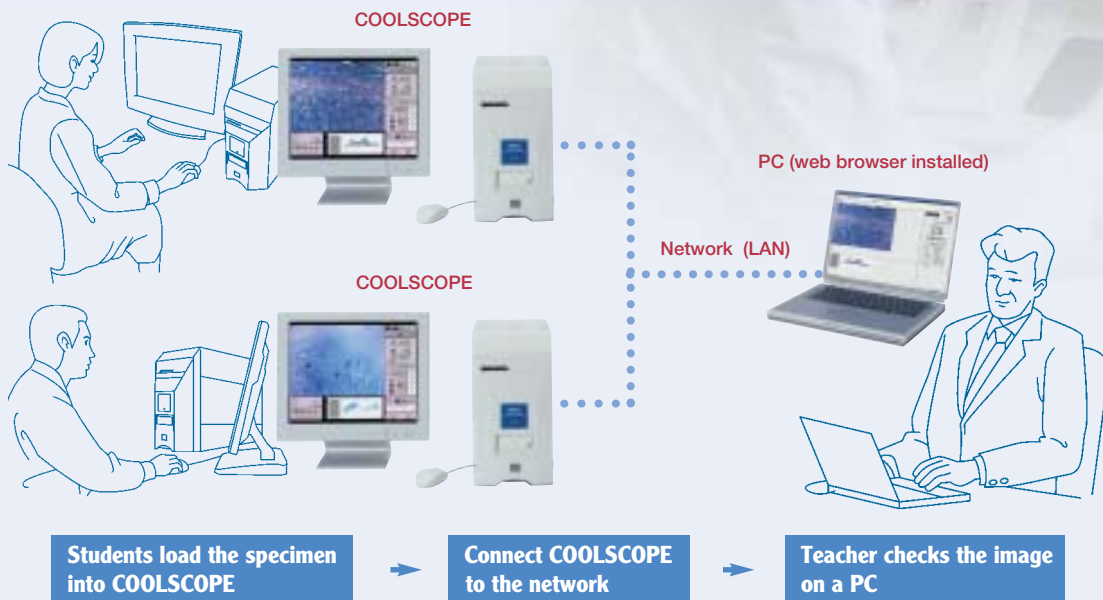
Observation of microscopic images and saving them are easily performed with a single unit of the COOLSCOPE. Saving the images on CompactFlash cards and transferring them to other networked PCs is also easily done.

## Projection and conferencing at scientific congresses and study groups



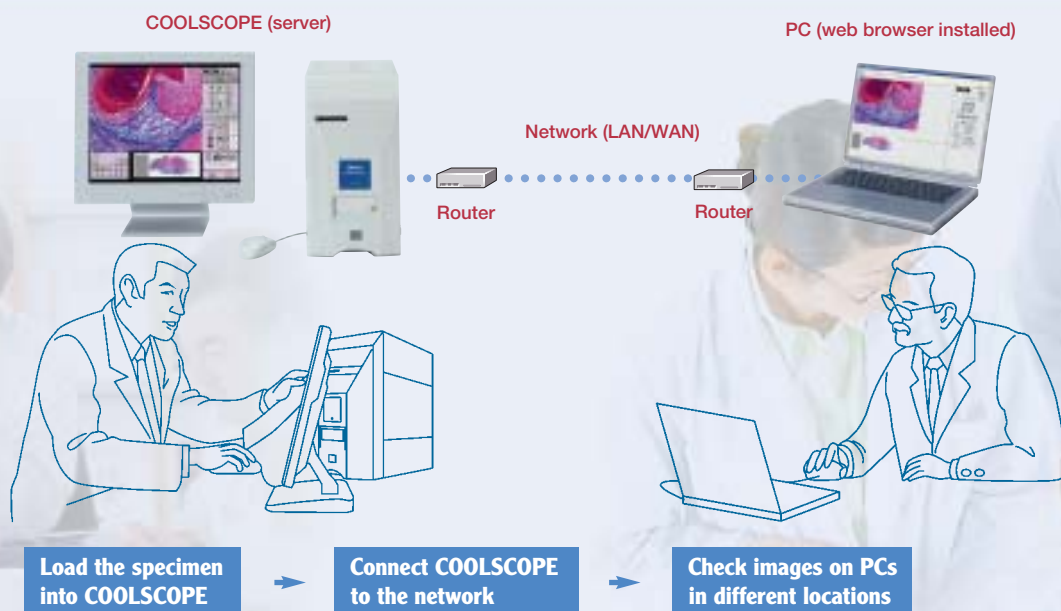
The time and trouble of adjusting the microscope and manipulating various settings are dramatically eliminated. Changing the specimen is also fast and easy.

## Sharing of images in classrooms



Sharing of images during lectures or practice lab sessions is easy. The memory function allows for a simple, accurate confirmation of the observation point on the specimen.

## Consultation via the network



The same pathology specimen can be viewed on networked PCs in different locations, enabling consultation within a hospital or beyond it. Control of the image, e.g. changing of the magnification, is possible from remotely networked PCs.

# COOLSCOPE

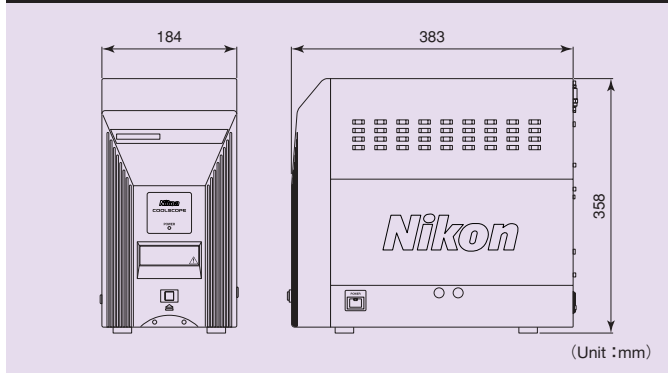
## Specifications

Samples observable	1 slide glass preparation (up to 1.7mm total thickness including slide glass and specimen)
Compatible slide glass	Up to 1.2mm in thickness, 26mm in width, 76mm in length (ISO 8037 compliant)
Compatible cover glass	Up to 0.17mm (No.1) or 0.18mm (No. 1.5) in thickness (ISO 8255 compliant)
Observation method	Transmitted brightfield
Observable area	Entire area of a slide glass preparation (26 x 76mm)
Image display mode	Macro (full slide glass preparation area) and Micro images (partial enlargement)
Optics	CF corrected infinity optics (CFI60 system)
Illumination	White LED
Focusing	Auto-focus and Manual
CCD	2/3-in. CCD (total number of pixels: 5.24-mega pixels; effective 5.07-mega pixels)
CCD sensitivity	2400 lx, f5.6 or greater (equivalent to ISO 260)
A/D conversion	12bit
Magnification changeover (motorized)	On CCD, 5X, 10X, 20X, 40X (micro image)
Electronic zoom	During full-screen display. 1.4X, 2X, 2.8X, 4X, 16X (micro image)
Exposure control	Program AE with AE Lock

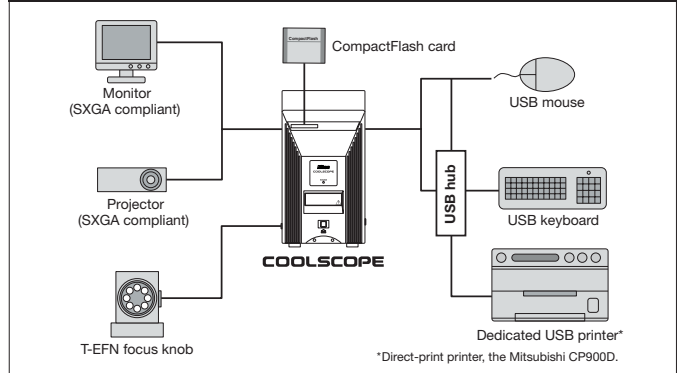
Metering	Average and Peak-hold
Image correction	White balance (method of setting color balance), $\gamma$ correction (4 steps), shading correction
Aperture setting	Auto and Manual
Output to external monitors	Analog RGB: SXGA (1280 x 1024, 60 Hz)
Live image display	1.3M progressive mode (7.5 frames/sec. max.), 5M interlaced mode (3.75 frames/sec. max.)
Image size	2560 x 1920 pixels or 1280 x 960 pixels
Image file format	BMP, JPEG compliant (3 compression rates selectable)
Recording media	CompactFlash card (Type I, Type II)
Network	Ethernet (10/100Base-TX), HTTP server, TelNet server, FTP server, FTP client
Interface	USB1.1 host port (USB mouse, USB keyboard, dedicated USB printer*)
External controller	T-EFN focus knob (option)
Power source	AC 100-240V, 50/60 Hz
Power consumption	120VA
Weight	COOLSCOPE unit: approx. 18.5kg
Operating environment	Temperature: 0-40°C, humidity: 85% RH max.
Standard configuration	COOLSCOPE unit, power cord, CompactFlash card (32MB)

\*Direct-print printer, the Mitsubishi CP900D.

## Dimensional Diagram



## System Configuration



Dedicated Website: [www.coolscope.com](http://www.coolscope.com)

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. December 2004 ©2003-4 NIKON CORPORATION

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

\* Monitor images are simulated.  
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