Slide Scanning Systems for Whole Slide Imaging

NanoZoomer Whole Slide Scanners: Experience drives revolution

- Ultra-fast, simple creation of high resolution digital slides
- Rapid image sharing for remote consultation via the Internet or LAN
- Easy duplication, storage, archiving, retrieval, image analysis and annotation
- A digital pathology resource for education, training, presentations and meetings
- No image degradation or photobleaching of labile fluorescent probes

HAMAMATSU

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What is the NanoZoomer?

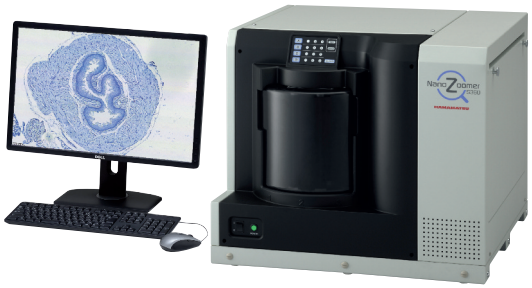
The NanoZoomer series is our solution for transforming histology/cytology glass slides into diagnostic quality digital slides.

Over ten years of experience in scanning technology has made the NanoZoomer series a leading device throughout the world.

NanoZoomer systems quickly capture high resolution digital images of entire slides for duplication, annotation, storage, retrieval and image sharing via a network to aid consultation, information dissemination and record keeping. Mundane tasks can be automated to make more effective use of the pathologist's time and expertise.

- **State-of-the-art imaging technology for high speed, high resolution image capture**
- **Multilevel scanning of cytology or thick histology slides**
- **Unprecedented colour fidelity and structural detail**
- **Optional fluorescence unit for scanning fluorescently labelled tissue**
- **Easy viewing on a PC monitor**

Introducing the newly developed NanoZoomer S360; revolutionary scanning technology for digitizing clinical routine pathology



- Greatly improved throughput (82 slides/h at 40x mode for 15 x 15 sample sizes) and slide capacity of 360 for high workload laboratories
- Simple operation and hassle free scanning
- Powerful scanning software for fast and easy operation
- Robust and stable scanning. Automatic system calibration
- Sharp focus on entire specimen and advanced focus scoring with automated rescan option for higher success rate

NanoZoomer – what does it do?

The NanoZoomer range of slide scanning systems all use the same technologically advanced image sensor to quickly turn glass slides into virtual slides whilst still maintaining outstanding levels of image detail and colour reproduction. Depending on the application or set of applications there is a NanoZoomer to suit your needs.

Scanning control software

The control software of the NanoZoomer has been designed by Hamamatsu to be intuitive to use and requires very little tuition before operators are able to scan slides with confidence. Complete flexibility allows the operator to scan slides in a variety of modes; at any time during scanning it is possible to interrupt the current scan to load and scan more urgent slides before resumption of slide scanning at the point the interruption occurred.

Multilevel scanning of whole slides

Whole slides can be scanned at different focus levels to re-create the Z focus facility of a microscope. The number of levels and the distance between levels can be set by the operator.

Pre-screening of slides

Slides can be quickly pre-screened before deciding on regions of interest to be scanned. Slides can be scanned in automatic, semi-automatic or manual mode.

1D barcode reader

Supported barcode standards include: CODE-39, CODE-128, CODE-2-of-5 Interleaved, Codabar, EAN-8, EAN-13, Patch Codes, UPC-A and UPC-E.

If a slide does not have a barcode it is possible for the operator to name individual slides or import them from Word or Excel documents. In addition, all scans have an associated macro image which displays both the barcode (if present) and any hand written annotations

2D barcode reader

Available as an option.

Digital slide distribution & management software

Available as an option.

Image analysis software

Options for general or specific applications such as TMA analysis, Stereology and Education.

Fluorescence illumination system

Available as an option which can be retrofitted on site.

NanoZoomer – applications for whole slide imaging include:

Routine & Computer Aided Diagnoses in the Pathology Laboratory

The ability to quickly produce and share high quality virtual slides paves the way for routine use of image analysis software to support the diagnostic decisions made by Pathologists.

The ability of advanced digital slide scanning systems to automatically scan batches of slides and identify slides by their barcodes frees Pathologists from the more mundane aspects of reporting and should also help to reduce errors.

A fully digital medium enables an integrated approach to patient data collection, distribution, reporting and the seamless integration of different data types – images, text, database, statistics, quantitative analysis – into flexible information management systems.

Research

The use of Tissue Microarray Analysis (TMA) is now becoming standard practice in the research pathology laboratory. Digital slide scanning systems which can produce a virtual slide of a TMA slide allied with the use of TMA analysis software significantly increase the throughput of these slides, enabling data to be extracted and analysed more rapidly and efficiently.

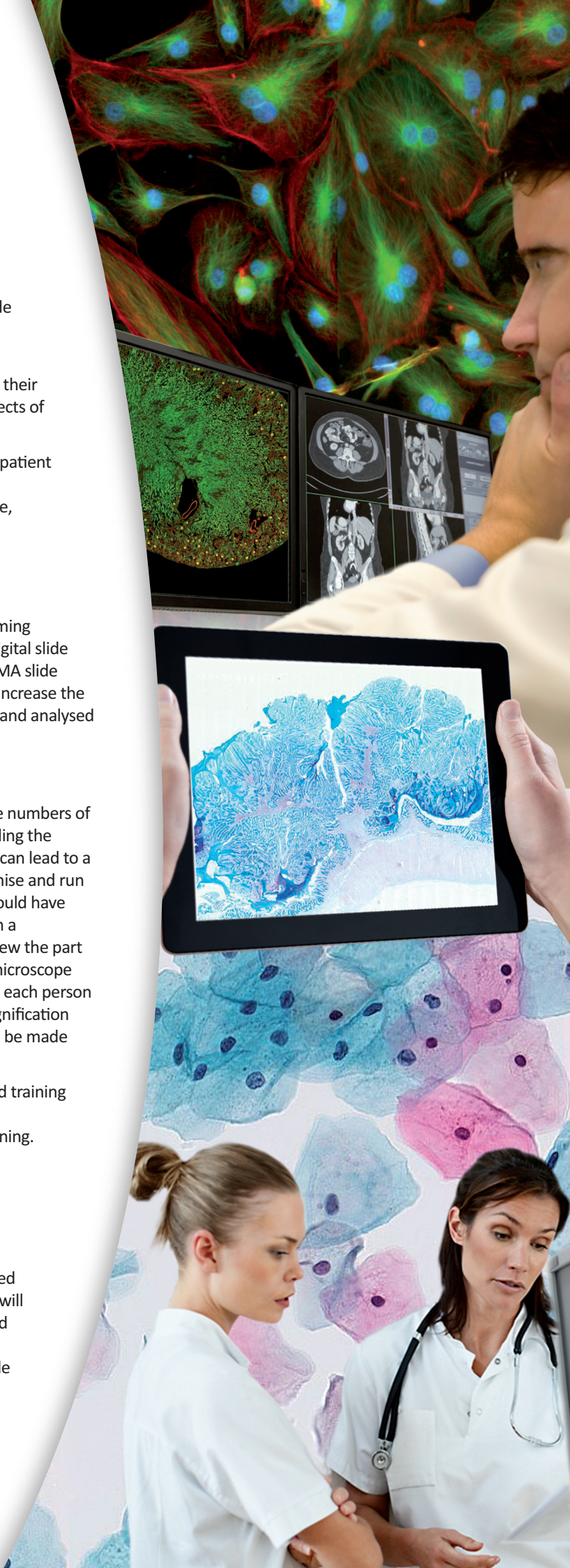
Education & Training

Virtual microscopy allows viewing of virtual slides by large numbers of students or trainees over a computer network, thus avoiding the necessity of attending a teaching or training session. This can lead to a large reduction in the time and expense required to organise and run these sessions. Traditionally, the students and trainees would have viewed images generated by a digital camera mounted on a microscope. Each person would have only been able to view the part of the slide and objective magnification selected by the microscope operator. Using web server software it is now possible for each person to view a section of the slide selected by them at the magnification they choose. Not only are there significant cost savings to be made but the quality of the learning experience is enhanced.

Wireless networks extend the accessibility of teaching and training materials to make them available on portable and pocket computers/devices to facilitate “anytime, anywhere” learning.

Telepathology

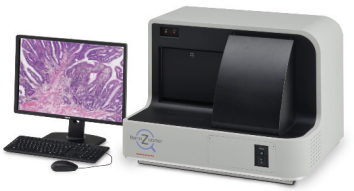
The physical bulk of large slide collections and the area a pathologist may be responsible for is increasing and subsequently creating massive storage and accessibility problems. The creation of virtual slides which can be stored on a server, allowing access from anywhere in the world, will enhance the efficiency of a pathologist or department and reduce the risk of damaged or lost slides. Applications where this ability to access slides quickly and easily include cases for second opinions, MDT meeting preparation, intraoperative frozen sections, multisite clinical trials, education and training.



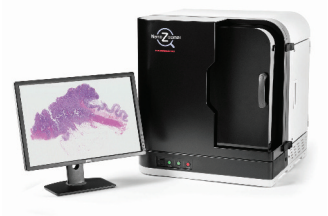
NanoZoomer Slide Scanning Systems

A NanoZoomer model for all your whole slide imaging needs

NanoZoomer S360
Revolutionary scanning technology for digitizing clinical routine pathology. Greatly improved throughput (more than 82 slides/h at 40x mode for 15 × 15 mm sample sizes) and slide capacity of 360 for high workload laboratories.



NanoZoomer S210
With a capacity of 210 slides in a single batch or the option for continuous loading, the NanoZoomer S210 is the ideal solution for small and medium sized hospitals or research departments.



NanoZoomer S60
The NanoZoomer S60 delivers the perfect combination of flexibility, excellent image quality and high speed scanning. It can scan up to 30 double size slides or up to 60 standard size slides. Supports brightfield and fluorescence imaging .

Fluorescence Option
Supplied as an option with your NanoZoomer scanner or can be retrofitted on site.

NanoZoomer SQ
The NanoZoomer SQ desktop single slide scanner is an easy to use, affordable solution ideal for telepathology applications.

For more information on NanoZoomer Systems contact us today

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