High speed, high-resolution whole slide image scanners

NanoZoomer® series

Line-up brochure

HAMAMATSU

PHOTON IS OUR BUSINESS

What is NanoZoomer®?

NanoZoomer® is the whole slide scanner that scans glass slides at high speed and converts them to high quality digital images.
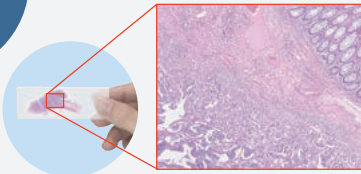
Converting to digital images
▶ ▶ ▶ ▶ ▶

What a whole slide scanner can do

Unique scanning capabilities

Look here!

1. Scan

Captures high definition images

Glass slides are scanned and captured as billions of pixels of high-definition image data, so the details of tissues can be clearly displayed.
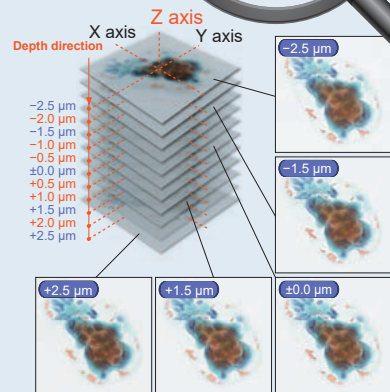
Multilayer images of thick specimens can be obtained

The function to change the focus in the depth direction to acquire multi-layer images enables you to get a clear image of the part you need to observe even in a thick specimen.

Z axis
X axis   Y axis
Depth direction

−2.5 µm
−2.0 µm
−1.5 µm
−1.0 µm
−0.5 µm
±0.0 µm
+0.5 µm
+1.0 µm
+1.5 µm
+2.0 µm
+2.5 µm

−2.5 µm
−1.5 µm
+2.5 µm   +1.5 µm   ±0.0 µm

Fluorescent stained specimens can be scanned (S60)

The addition of a fluorescence imaging module (option) enables scanning of fluorescent stained specimens. It is also possible to superimpose the bright-field image and fluorescent image of the entire tissue image.

2. View

Tissue observation on a PC monitor

Scanned images can be easily checked for the whole and details of the tissues on a monitor using the image viewing software.
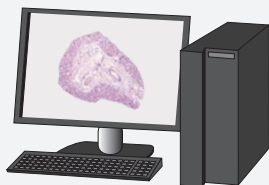
Dedicated image viewing software that is as operable as a microscope

We provide the "NDP®.view2" image viewing software for NanoZoomer®, which has both excellent followability and intuitive operability. (Download for free)

➡ Enlarged   ➡ Further enlarged

Mouse wheel   Mouse wheel
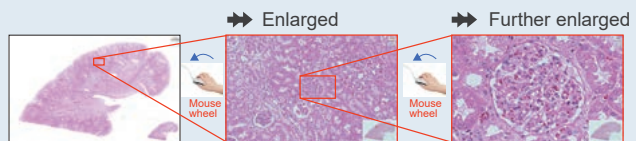
NDP®.view2 works on Windows® OS/mac OS, local and Web environments, so you can install the software without changing your PC environment.

3. Serve

Data sharing from remote locations

Stored data can be viewed from a remote location via internet or intranet. Furthermore, you can share data and construct slide libraries with remote facilities and research institutes.

Dedicated software for image storage and sharing with a variety of functions

NZConnect, the image distribution software for NanoZoomer®, can manage the access authority to the image database, allowing simultaneous access by many people.

Product line up

NanoZoomer® S360

C13220

High-end model with exceptional scanning speed
Up to 360 1" × 3" (26 mm × 76 mm) slides
automatically in one batch

NanoZoomer® S210

C13239

Standard model with a low cost of ownership
Up to 210 1" × 3" (26 mm × 76 mm) slides
automatically in one batch

NanoZoomer®-SQ

C13140

Compact, affordable, and easy-operable model
Up to a 1" × 3" (26 mm × 76 mm) slide
at a time

For both brightfield and fluorescent scanning

NanoZoomer® S60

C13210

Compatible with 2" × 3" (52 mm × 76 mm) slides
Up to 30 2" × 3" slides or up to 60 1" × 3" (26 mm × 76 mm) slides
Fluorescence support model

		NanoZoomer® S360	NanoZoomer® S210	NanoZoomer® -SQ	NanoZoomer® S60
Product number		C13220	C13239	C13140	C13210
Features		High speed, mass processing	Well-balanced	Compact, affordable	2" × 3" (52 mm × 76 mm) slides Fluorescence available
Compatible glass slide	1" × 3" (26 mm × 76 mm) slide	√	√	√	√
	2" × 3" (52 mm × 76 mm) slide	–	–	–	Option
Z-stack feature		Included	Included	Included	Included
Scanning speed (20× mode) (15 mm × 15 mm)		Approx. 30 seconds	Approx. 60 seconds	Approx. 150 seconds	Approx. 60 seconds
Scanning speed (40× mode) (15 mm × 15 mm)		Approx. 30 seconds	Approx. 150 seconds	Approx. 275 seconds	Approx. 150 seconds
Automatic scanning		360 slides	210 slides	1 slide	60 slides (1" × 3" [26 mm × 76 mm] slide) 30 slides (2" × 3" [52 mm × 76 mm] slide)
Fluorescence imaging		–	–	–	Option
Daily capacity		300 to 1000 slides	50 to 300 slides	1 to 30 slides	30 to 200 slides

Product line up

High-end model with exceptional scanning speed
Up to 360 1" × 3" (26 mm × 76 mm) slides
automatically in one batch

NanoZoomer® S360

C13220

● **Scanning speed (15 mm × 15 mm)**
▪ 20× mode: approx. 30 seconds
▪ 40× mode: approx. 30 seconds

● **Automatic scanning**
▪ Max. 360 slides

High throughput

In addition to improving the scanning speed, all aspects including the handling system and data transfer speed have been improved to achieve high throughput.

High throughput of 82 slides/h

The scanning time required for one glass slide is about 30 seconds. High throughput of 82 slides/h (15 mm × 15 mm) has been achieved in both the 20× mode and 40× mode, including the handling time for glass slides.

A batch of 360 glass slides can be scanned automatically

Up to 360 slides (30 slides × 12 cassettes) are automatically processed. Place the glass slides in the cassettes, set them in the holder of the machine, then start it, and each slide is automatically handled and scanned.

1080 slides scanning a day

It takes about 4.5 hours to process 360 glass slides (one batch) automatically.
After completion, by loading the next batch and repeating the process, 1080 glass slides can be scanned per day.

8:00	12:30	17:00
Loading 12 cassettes	Loading 12 cassettes	Loading 12 cassettes

Easy to use and convenient

Control each cassette unit independently

Scanning conditions can be controlled independently for each slide cassette making operations more efficient. In addition, barcodes attached to each slide cassette make it easy to extract and sort slides after scanning.

Each cassette can be allocated with a unique barcode.

Scanning status can be checked easily for each of the cassette units

Scanning status can be checked easily in a cassette units. On the display panel at the top of the device, you can check the scanning progress such as "Before scanning," "Ongoing" or "Completion of scanning" in each of the slide cassette units.

Signaled by white light for properly set cassettes, blinked white light for not properly set cassettes, green light for the completion of scanning.

Automatic Image confirmation

Automatic foucus evaluation makes users to reduce the workload for checking image quality of slides.

Easily extract glass slides that require visual confirmation

The scanned image is automatically evaluated using a focus scoring function. With this, you can ascertain the overall scanning quality and by extracting images that are lower than the reference score, you can easily identify images that need to be checked visually or rescanned. When checking a large number of images, you can greatly reduce workload and improve efficiency.
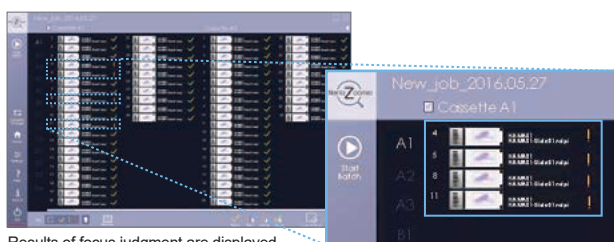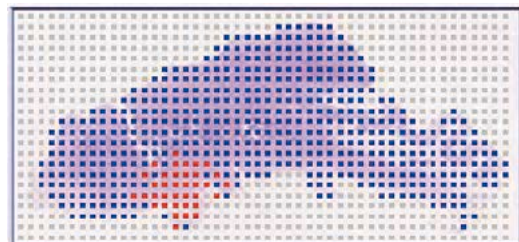
Results of focus judgment are displayed

Easy detection of only glass slides with low focus score

Check focus defects in scanned images at a glance

The distribution of pass/fail of the focus can be displayed superimposed on the entire image of the scanned image, making it easy to find the parts that need to be checked visually.
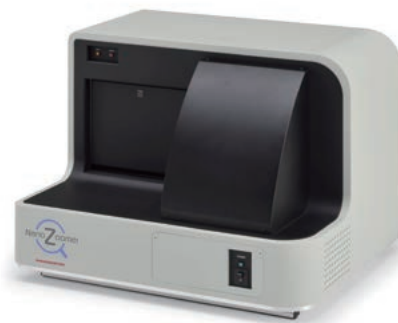
Focus pass/fail distribution can be checked at a glance (red area indicates poor focus)

Standard model with a low cost of ownership
Up to 210 1" × 3" (26 mm × 76 mm) slides
automatically in one batch

NanoZoomer® S210

C13239

- **Scanning speed (15 mm × 15 mm)**
  - 20× mode: approx. 60 seconds
  - 40× mode: approx. 150 seconds
- **Automatic scanning**
  - Max. 210 slides

Well-balanced

The NanoZoomer® S210 is the re-engineered based on Hamamatsu's proven workhorse in digital pathology workflow solutions.
This model has well-balanced with a low cost of ownership; Efficient, robust, and dependable at a price point designed to minimize risk and maximize benefits when implementing or augmenting digital workflow solutions.

Compact, affordable, and easy-operable model
Up to a 1" × 3" (26 mm × 76 mm) slide at a time

NanoZoomer®-SQ

C13140

- **Scanning speed (15 mm × 15 mm)**
  - 20× mode: approx. 150 seconds
  - 40× mode: approx. 275 seconds
- **Automatic scanning**
  - Max. 1 slide

Compact and lightweight

A compact model developed for customers who have limited installation space.
Compact and lightweight: 360 mm wide, 380 mm high, 450 mm deep, and about 20 kg of weight.

Easy operation in 3 steps

Scanning can be done by simply setting the magnification and pressing the start button on the main unit. It is also possible to set detailed scanning conditions.

Set the glass slide

Just press the start button
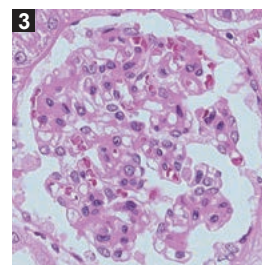
You can get the whole image of a slide with high resolution

Product line up

Compatible with 2" × 3" (52 mm × 76 mm) slides
Up to 30 2" × 3" slides or up to 60 1" × 3" (26 mm × 76 mm) slides
Fluorescence support model

NanoZoomer® S60

C13210

- **Scanning speed (15 mm × 15 mm)**
  - 20× mode: approx. 60 seconds
  - 40× mode: approx. 150 seconds
- **Automatic scanning**
  - Max. 60 slides

Compatible with 2" × 3" (52 mm × 76 mm) slides

By setting the dedicated cassette (option), 2" × 3" (52 mm × 76 mm) slides can be scanned.
Up to 3 cassettes can be set with combination of 1" × 3" (26 mm × 76 mm) and 2" × 3" (52 mm × 76 mm).
The maximum number of automatic scanned slides is 60 for 1" × 3" (26 mm × 76 mm) slides only and 30 for 2" × 3" (52 mm × 76 mm) slides only.

1" × 3" (26 mm × 76 mm)   2" × 3" (52 mm × 76 mm)
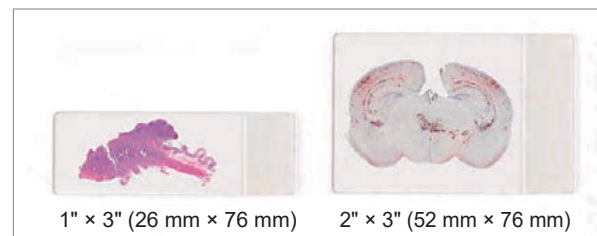
Compatible with fluorescent stained specimens

Besides bright-field images, the addition of a fluorescence imaging module (option) enables scanning of fluorescent stained specimens. It is also possible to superimpose the bright-field image and fluorescent image of the entire tissue image. Clear images can be obtained using a camera dedicated to fluorescence.

DAPI   FITC   TRITC   Cy5

▶ ▶ ▶ ▶ ▶
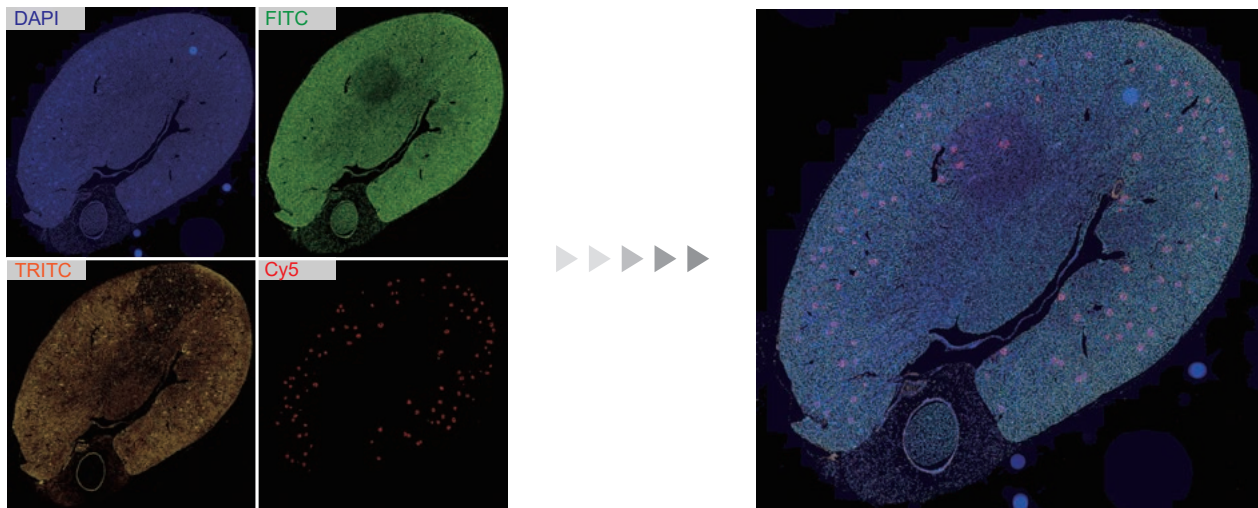
Possible to superimpose

Option for fluorescence scan

Fluorescence imaging module for S60 L13820-01	Type of sensor	CMOS sensor for scientific research use
	Number of filter cube positions	3
Filter wheel for S60 L13820-02	Number of excitation filters	6 (Φ25 mm)
	Number of emission filters	6 (Φ32 mm)
Solid state illumination unit SOLA III V-nIR (Lumencor)	Light source	Solid-state illumination with long lifetime
5 mm LLG with PVC outer sleeve	Liquid light guide	Φ5, L=2.0 m

Options

NDP®.view2 Plus Image viewing software U12388

More practical observation functions have been added to the "NDP®.view2 Image viewing software."

NDP®.view2 Plus is designed to maximize the benefits of whole slide viewing and offers users additional tools with excellent smoothness and intuitive operability to enable more precise observation.

NDP®.toolkit Slide processing software U10909

Image data saved on a local computer can be edited

X-Y trimming and Z-stack trimming of whole slide imaging, and label editing are supported.

NZConnect Serve Basic
Web slide server software U16179

Image data can be distributed via the Internet and/or Intranet

NZConnect Serve Basic is the image distribution software that efficiently distributes large-volume whole slide images scanned by NanoZoomer® series via the Internet and/or Intranet. Access authorities to the image database can be managed. It enables many people to access the database at the same time and supports a wide range of applications, such as image observation from a remote location and student education.

* Adding the charged option makes it possible to remove the limitation for the number of serving images via NZConnect.
 For the details, please contact us.

S60 Dedicated option

Fluorescence imaging module for S60 L13820-01

Fluorescent stained specimens can be scanned

By combining the fluorescence imaging module with the NanoZoomer® S60, the entire image of a fluorescent stained specimen can be scanned at high speed and high resolution. By converting to digital data, fluorescent stained specimens can be observed without fading.

Slide cassette

Additional slide cassettes for NanoZoomer®.

Product number	Used for	Slide capacity	Number of cassettes included	Size of slide
A14353-02	S360	30 slides	12	1" × 3" (26 mm × 76 mm)
A10294	S210	30 slides	7	
A13798-01	S60	20 slides	4	
A13798-02	S60	10 slides	Not included	2" × 3" (52 mm × 76 mm)

S360 Dedicated option

Barcode card (blue) for NanoZoomer® cassette A14354-01

Barcode cards used for cassettes of NanoZoomer® S360. Used to manage slide cassettes in the image acquisition software "NZAcquire." They are blue-colored with a printed barcode and contain 120 sheets per case.

* The NanoZoomer® S360 comes with one case as a standard accessory.

Barcode option

Software that enables the device to read 2D barcodes. 2D barcode information on glass slides can be read automatically and added to whole slide images.

Product number	Image Aqcuisition software*	2D barcode
U10386	NDP®.scan	For Data matrix
U10499		For QR-CODE
U14593	NZAcquire	For Data matrix
U14594		For QR-CODE

* NDP®.scan and NZAcquire are image acquisition software required to convert the glass slide images into digital images. The applicable software varies depending on model.

Dimensional outlines (Unit: mm)

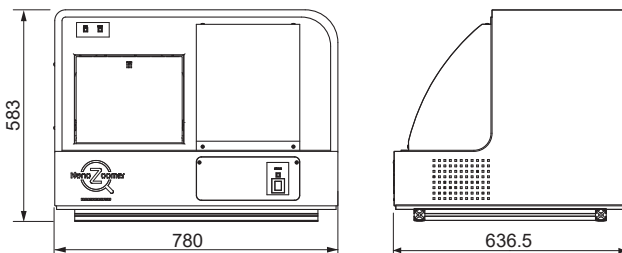* The following sizes do not include protrusions such as screws.

☐ NanoZoomer® S360
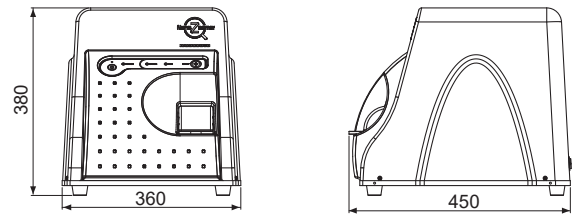Weight Main unit: approx. 117 kg, Dedicated rack (included in the system): approx. 78 kg

628 | 750 | 695 | 7.5 | 750 | 7.5 | 690 | 690
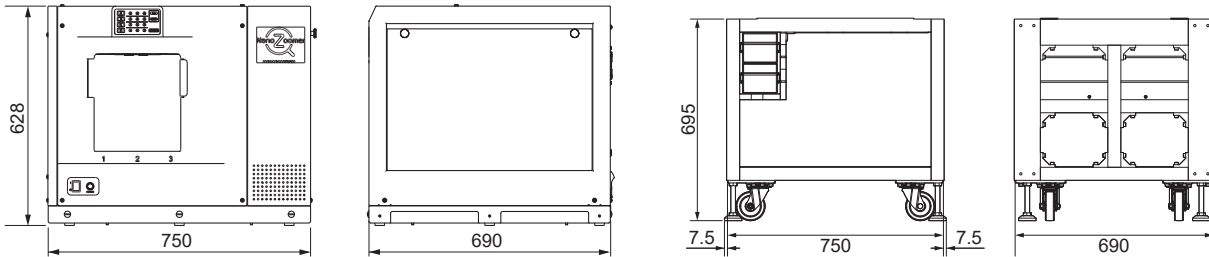
☐ NanoZoomer® S210
Weight Main unit: approx. 69 kg

583 | 780 | 636.5

☐ NanoZoomer®-SQ
Weight Main unit: approx. 20 kg

380 | 360 | 450

☐ NanoZoomer® S60
Weight Main unit: approx. 79 kg (not including the optional fluorescence module)

700 | 685 | 683

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