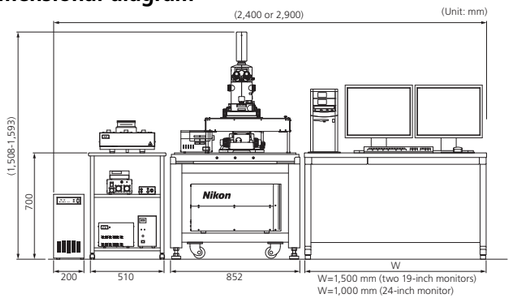
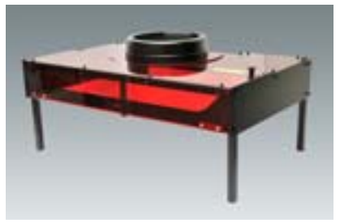
Specifications

AZ100 optical zoom	1-8x (zoom ratio 8 : 1)	
C1 confocal scan zoom	1x-1000x (continuous variable)	
Stand	AZ-STE EPI stand/ AZ-STD DIA stand	Focus range: 85 mm stroke Coarse focus: 18.5 mm/rotation Fine focus: 3.27 mm/rotation Stage focus: 10 mm range with 0.27 mm/rotation under software* control with remote focus accessory
Objective	AZ-Plan Apo 0.5x (NA 0.05/W.D. 54 mm), AZ-Plan Apo 1x (NA 0.1/W.D. 35 mm), AZ-Plan Fluor 2x (NA 0.2/W.D. 45 mm), AZ-Plan Apo 4x (NA 0.4/W.D. 20 mm), AZ-Plan Fluor 5x (NA 0.5/W.D. 15 mm)	
Laser light source	Laser wavelength options	Laser diode (445 nm, 17 or 40 mW), Ar laser (488 nm, 10 mW), Ar laser (457, 477, 488 or 514 nm, 50 mW), Solid state laser (488 nm, 20 or 50 mW), G-HeNe laser (543 nm, 1.5 mW polarized), Solid state laser (561 nm, 10, 20 or 50 mW), Y-HeNe laser (594 nm, 2 mW), R-HeNe laser (633 nm, 5 mW), Laser diode (640 nm, 20 or 40 mW)
	Maximum number	4
	Laser control options	AOM/AOTF/manual
	Laser shutter	Motorized mechanical shutter (each laser)
Standard fluorescence detector	Number of channels	C1si: 3 channels, C1si-Ready: 3 channels, C1plus: 2 channels/3 channels
	Display mode	160 x 160 to 2048 x 2048 pixels
	Scanning speed	Standard: 1 fps (512 x 512 pixels), Bi-directional scanning: 1.4 fps (512 x 512 pixels)
Spectral detector (C1si)	Number of channels	32 channels
	1st dichroic mirror	20/80 beam splitter
	Corresponding wavelength	400-750 nm
	Wavelength resolution	2.5/5/10 nm (switchable)
	Minimum wavelength step	0.2 nm
	Display mode	160 x 160 to 2048 x 2048 pixels
	Scanning speed	Standard: 0.5 fps (512 x 512 pixels, 32 channel simultaneous recording)
Power	Confocal system (PC, monitor, C1 controller, AOM controller): Approx. 830 W (single phase AC 115 V, 7.2 A / AC 230 V, 3.6 A, with earth) (Does not include microscopes and lasers.)	

*Use EZ-C1 version 3.80 or later

Dimensional diagram





AZ100 stage cover

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

Product images appearing in this brochure do not include the laser safety stage cover. The diascopic detector is under development. Sample images in this brochure captured with the prototype only. AZ-C1 is a combination of the AZ100 microscope and the C1 series confocal laser microscope system. The AZ100M and A1 series are not compatible.
Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. September 2009

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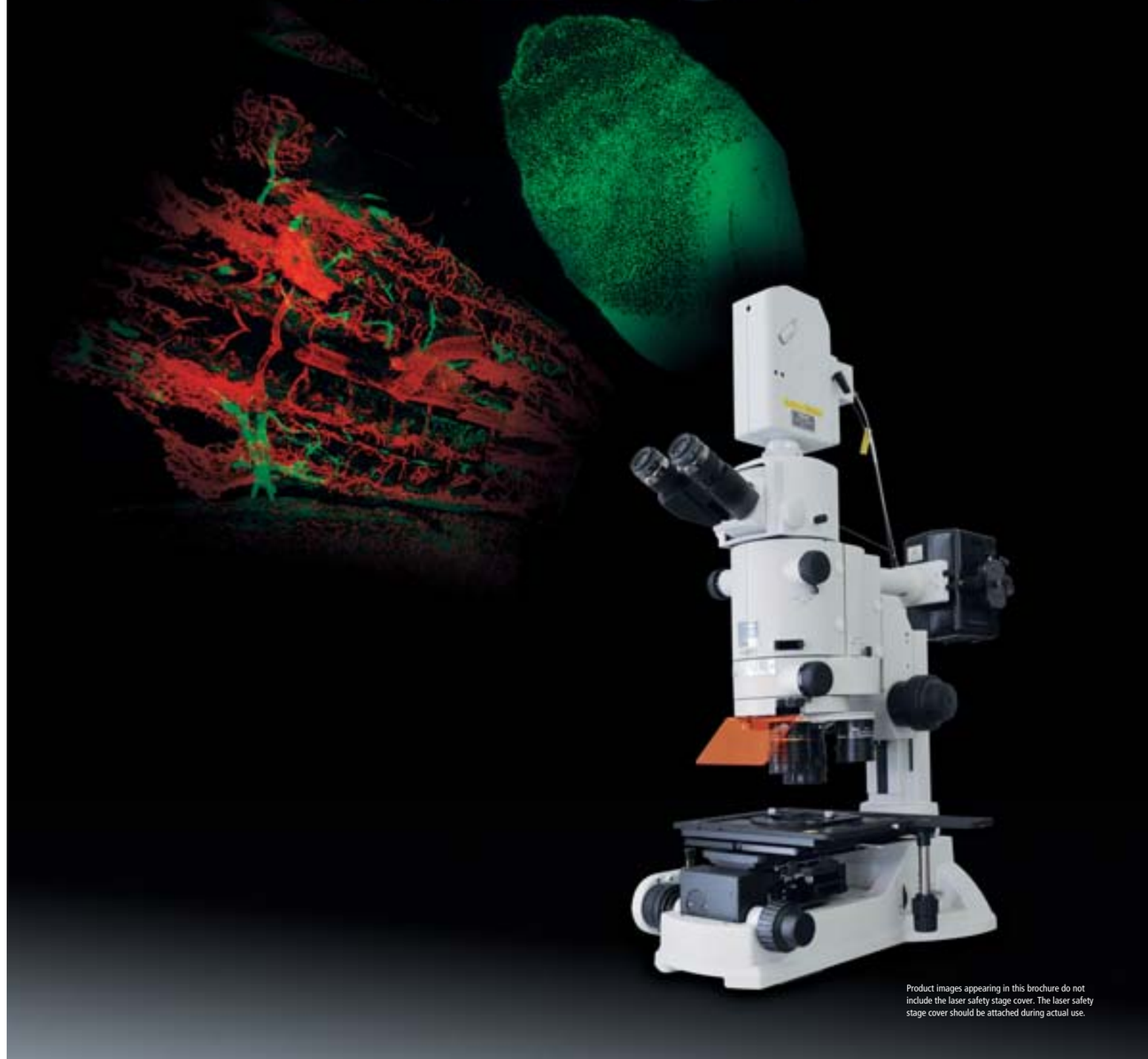
Nikon

Macro confocal microscope system

AZ-C1

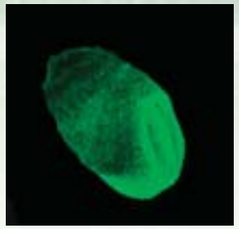


Product images appearing in this brochure do not include the laser safety stage cover. The laser safety stage cover should be attached during actual use.

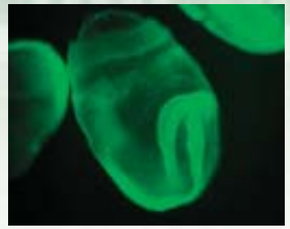
New system for high-definition macro confocal image acquisition

The AZ-C1 enables high-definition confocal image acquisition during macro observation.
Sharp wide field of view images with unprecedentedly high S/N ratios allow for imaging of whole-mount specimens such as embryos and large tissue slices that are commonly used in developmental and systems biology studies.
Moreover, the AZ-C1 offers a combination of low and high magnification objective lenses and a scanning zoom function, enabling continuous imaging from macro to micro with a single microscope.
New macro in vivo imaging capabilities allow for the capture of confocal images that were previously not possible with traditional stereoscopic microscopes.

Comparison of same specimen regions captured by the AZ-C1 and an epi-fluorescence microscope
The AZ-C1 eliminates out-of-focus light and flare to deliver highly resolved confocal fluorescence images and optical sections.



AZ-C1 (confocal fluorescence maximum projection image)

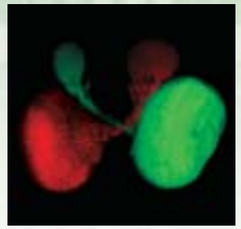


Standard wide-field fluorescence image

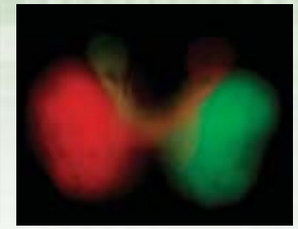
Specimen: 7.5-day-old mouse embryo expressing H2B-EGFP. (Plan Fluor 2x used)
Photos courtesy of: Dr. Toshihiko Fujimori*1*2, Dr. Go Shioi*2

*1: Division of Embryology, Developmental Biology, National Institute for Basic Biology

*2: Genetic Engineering Unit, Laboratory for Animal Resources and Genetic Engineering, Center for Developmental Biology, RIKEN



AZ-C1 (confocal fluorescence maximum projection image)



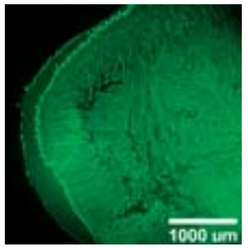
Standard wide-field fluorescence image

Specimen: Zebrafish eye double-stained with GFP and mCherry
Photos courtesy of: 2008 Physiology Course, Marine Biological Laboratory

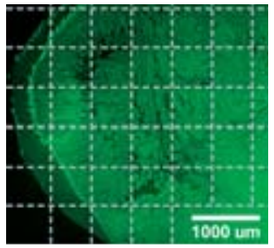
One-shot—whole specimen—macro confocal image acquisition

High NA objectives for macro observation enable fast, high-resolution, single-image capture of a wide specimen area. Because the objectives cover a field of view larger than 1 cm, imaging of embryos during late stages of development and the dynamics of cell populations in whole organs are possible. Minute specimen structures can be clearly seen, even in macro images.

Note: When Plan Apo 1x and AZ100 optical zoom 4x are used, the diagonal diameter of the real field of view is 5.3 mm.



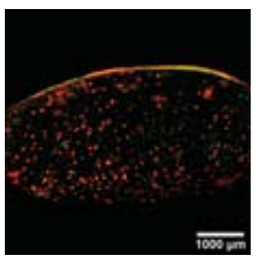
AZ-C1 (Plan Fluor 2x used)



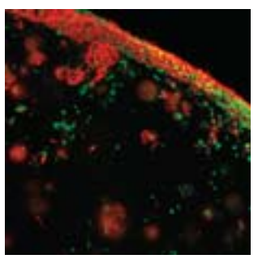
Conventional confocal microscope (stitched image)

With a conventional confocal microscope, image stitching is necessary because the field of view that can be captured in a single scan is small. The AZ-C1 can capture a wide field of view—optical sections at high resolution in a single scan.

Specimen: Rat tongue slice

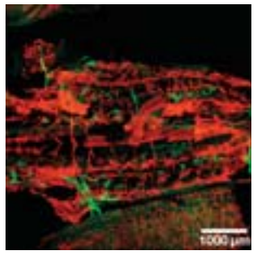


AZ-C1 (macro image, Plan Apo 1x used)



AZ-C1 (magnified image)

Specimen: Rabbit hyaline cartilage cells embedded in atelocollagen gel and cultured for 21 days; live cells (green) and type II collagen (red)
Photos courtesy of: Dr. Masahiro Kino-oka, Laboratory of Bioprocess Systems Engineering, Department of Biotechnology, Division of Advanced Science and Biotechnology, Graduate School of Engineering, Osaka University



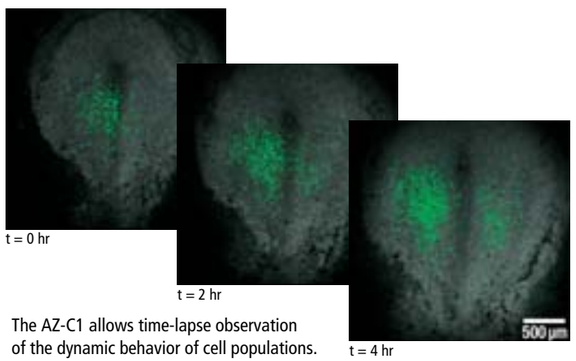
AZ-C1 (Plan Apo 1x used)

Specimen: Neurons (green) and blood vessels (red) of 6.0-day-old chick embryo

AZ-C1 (Plan Apo 1x used)

Specimen: Blood vessels (red) of 2.5-day-old chick embryo

Photos courtesy of: Dr. Yoshiko Takahashi, Molecular and Developmental Biology, Graduate School of Biological Science, NAIST



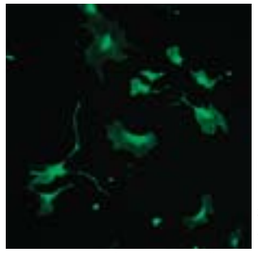
The AZ-C1 allows time-lapse observation of the dynamic behavior of cell populations.

The diascopic detector is under development. Sample images captured with the prototype only.

Specimen: Chick embryo in stage IV (Plan Fluor 2x used) expressing GAP43-eGFP to label plasma membrane.
Photos courtesy of: Dr. Yukiko Nakaya, Laboratory for Early Embryogenesis, Center for Developmental Biology, RIKEN

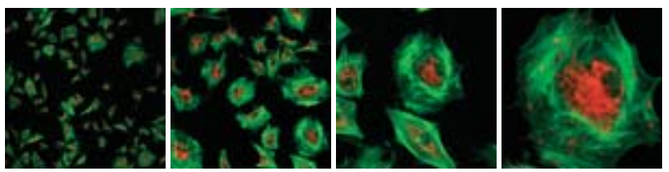
Continuous imaging from low magnification to high magnification

With five different objective lenses, optical zoom and confocal scan zoom, the AZ-C1 makes imaging possible from very low magnification to high magnification. Macro imaging, such as whole-section imaging, and micro imaging, including imaging of a single cell, can be done using a single microscope.



High magnification imaging offers clear and sharp images of single cells.

Specimen: Human breast cancer cell line MDA-MB-231 (Plan Fluor 5x used)
Photos courtesy of: Dr. Kazuyuki Itoh, Department of Biology, Osaka Medical Center for Cancer and Cardiovascular Diseases



Zoom 1x | Zoom 2x | Zoom 4x | Zoom 8x

Specimen: BPAE cells (Plan Fluor 5x and C1 confocal scan zoom used)

Deep imaging of whole specimens

The AZ-C1 allows imaging deep into the specimen—difficult to achieve with conventional confocal microscopes. The AZ-C1 efficiently captures fluorescence signals from deep within a specimen in both macro and micro imaging.

Observation with the AZ-C1
Cancer cells (red) 2 mm beneath the surface of the embryo can be imaged clearly.

The diascopic detector is under development. Sample image captured with the prototype.

Specimen: 2.5-day-old chick embryo
Photo courtesy of: Dr. Yoshiko Takahashi, Molecular and Developmental Biology, Graduate School of Biological Science, NAIST

Confocal laser microscope system C1si/C1si-Ready/C1plus

The Nikon C1 series offers the optimum confocal system to meet both your research and your budgetary needs.

C1plus: Standard model boasts high resolution, high sensitivity, and high contrast. Suited for single laboratories or large research groups.

C1si-Ready: Upgrade to C1si is possible by adding a spectral detector.

C1si: Spectral confocal system featuring a 32-ch multianode spectral detector. A spectral bandwidth of 320 nm can be captured in a single scan.

Note: Upgrade to macro confocal microscope system AZ-C1 through combination with AZ100.