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Photographed with the cooperation of: Dr. Yasushi Okada, Laboratory for Cell Polarity Regulation, Quantitative Biology Center, RIKEN (Microtubules in B16 melanoma cell, page 3)

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NIKON CORPORATION
Shin-Yurakucho Bldg., 12-1, Yurakucho 1-chome
Chiyoda-ku, Tokyo 100-8331, Japan
phone: +81-3-3216-2375 fax: +81-3-3216-2385
http://www.nikon.com/instruments/

NIKON INSTRUMENTS INC.
1300 Walt Whitman Road, Melville, N.Y. 11747-3064, U.S.A.
phone: +1-631-547-8500; +1-800-52-NIKON (within the U.S.A. only)
fax: +1-631-547-0306
http://www.nikoninstruments.com/

NIKON INSTRUMENTS EUROPE B.V.
Tripolis 100, Burgerweeshuispad 101, 1076 ER Amsterdam, The Netherlands
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http://www.nikoninstruments.eu/

NIKON INSTRUMENTS (SHANGHAI) CO., LTD.
CHINA phone: +86-21-6841-2050 fax: +86-21-6841-2060
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NIKON SINGAPORE PTE LTD
SINGAPORE phone: +65-6559-3618 fax: +65-6559-3668

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MALAYSIA phone: +60-3-7809-3688 fax: +60-3-7809-3633

NIKON INSTRUMENTS KOREA CO., LTD.
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NIKON FRANCE S.A.S.
FRANCE phone: +33-1-4516-45-16 fax: +33-1-4516-45-55

NIKON GMBH
GERMANY phone: +49-211-941-42-20 fax: +49-211-941-43-22

NIKON INSTRUMENTS S.p.A.
ITALY phone: +39-055-300-96-01 fax: +39-055-30-09-93

NIKON AG
SWITZERLAND phone: +41-43-277-28-67 fax: +41-43-277-28-61

NIKON UK LTD.
UNITED KINGDOM phone: +44-208-247-1717 fax: +44-208-541-4584

NIKON GMBH AUSTRIA
AUSTRIA phone: +43-1-972-6111-00 fax: +43-1-972-6111-40

NIKON BELUX
BELGIUM phone: +32-2-705-56-65 fax: +32-2-726-66-45

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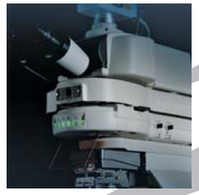


Biological Microscopes

En

Contents

*1 Nikon Advanced Modulation Contrast
*2 Brighter than 100W

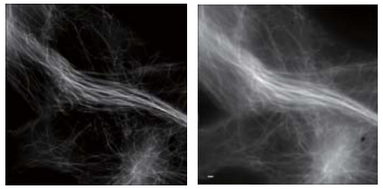
Super Resolution Microscopes

Super Resolution Microscope

N-SIM

Temporal resolution of 0.6 sec./frame enables super resolution time-lapse imaging of dynamic live cell events with double the resolution of conventional optical microscopes

- Offering nearly twice (up to approx. 85nm*) the resolution of conventional optical microscopes, N-SIM enables detailed visualization of minute intracellular structures and their interactive functions by utilizing “Structured Illumination Microscopy” technology (*excited with 488nm laser, in TIRF-SIM mode)
- Ultra-high temporal resolution of up to 0.6 sec/frame* enables super-resolution time-lapse imaging of dynamic molecular interactions in living cells (*with TIRF-SIM/2D-SIM mode)
- Various observation modes
  - TIRF-SIM/2D-SIM mode allows high-speed super resolution 2D image capture with incredible contrast; TIRF-SIM doubles the resolution of conventional TIRF microscopes, facilitating a greater understanding of molecular interactions at the cell surface
  - Two modes are available with 3D-SIM mode: Slice 3D mode allows axial super-resolution imaging with optical sectioning at 300nm resolution in specimens of up to 20µm thick; Stack 3D mode can image thicker specimens than Slice 3D mode (up to 50µm)
- 5-laser multi-spectral super resolution imaging facilitates the study of dynamic interactions of multiple proteins at the molecular level



Left: with N-SIM, Right: with conventional microscope
Microtubules in B16 melanoma cell

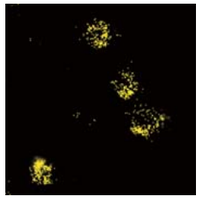
Dynamics of mitochondria (approx. 1 sec. image capturing intervals)

Super Resolution Microscope

N-STORM

Resolution 10 times that of conventional optical microscopes enables a greater understanding at the molecular level

- Ultra-high spatial resolution 10 times higher (approx. 20nm) than that of conventional optical microscopes is achieved by utilizing accurate localization information of thousands of discrete fluorophor molecules within a specimen
- In addition to lateral super-resolution, a tenfold enhancement in axial resolution (approx. 50nm) is achieved, effectively providing 3D information at the nanoscopic scale
- Multicolor super-resolution imaging utilizing a combination of various “activator” and “reporter” probes affords a critical insight into the co-localization and interaction of multiple proteins at the molecular level
- Compatible with 488nm laser



Clathrin-coated pit in a mammalian cell

Inverted Research Microscopes

ECLIPSE Ti Series

Ultimate solution for advanced imaging methods in live cell research

- Ti-E with motorized focusing and motorized three-port (four-port with Ti-E/B model) changeover, Ti-U with manual three-port (four-port with Ti-U/B model) changeover and Ti-S with manual two-port changeover
- High-speed multi-channel screening is possible by fast motorized control (Ti-E)
- The latest version of Perfect Focus System (PFS), which maintains focus in real-time during long-term observations, comes in two models: a UV-visible imaging model and a multiphoton imaging model. Both can maintain focus at greater depths than the previous model
- Imaging software NIS-Elements provides total system control for 6D time-lapse imaging (Ti-E)
- "Full intensity" external phase contrast unit allows use of specialized objectives without a phase ring and acquisition of high-quality images with high NA objectives
- Nikon original stratum structure allows simultaneous mounting of multiple fluorescence turrets and simultaneous acquisition of multiple wavelengths with two cameras including optional back port
- By attaching a HUB controller, desired components such as TIRF and filter turret, in addition to the stage and nosepiece can be motorized

Ti-E configuration with motorized accessories

Ti-U configuration with epi-fluorescence illuminator

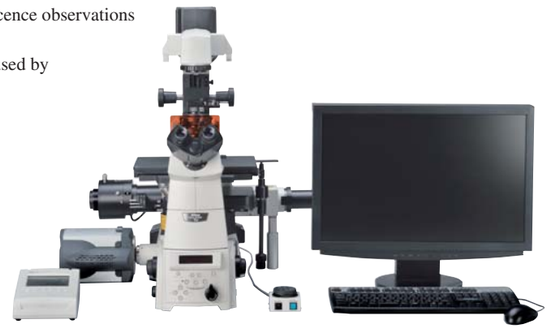
Ti-S

Accessories for Ti Series

Motorized/Manual Laser TIRF Illuminator Unit (for Ti-E/U)

- Enables visualization of a single molecule with extraordinary high S/N ratio
- Imaging within approx. 100nm from the coverslip-specimen interface with an evanescent wave
- The motorized TIRF system enables motorized control of laser incident angle from a PC or a remote control pad as well as storage and recall of up to four angles
- Laser TIRF, surface reflection interference contrast, and epi-fluorescence observations are switchable
- TIRF objective with correction ring adjusts image deteriorations caused by temperature changes

Motorized laser TIRF illumination unit



Accessories for Ti Series

TIRF Photoactivation Illuminator Unit (for Ti-E/U)

- A laser TIRF illuminator, photoactivation unit and epi-fluorescence illuminator have been combined in a single unit
- Switching between the three functions is easy

Photoactivation Illuminator Unit (for Ti-E/U)

- Photoactivation and photoconversion using proteins such as PA-GFP and Kaede are possible
- Realizes photoactivation of an arbitrary determined spot
- Photoactivation and epi-fluorescence observation are switchable

Epi-fl Illuminator Unit with White Light TIRF (for Ti-E/U/S)

- Handy and cost-effective TIRF observation using white light such as mercury illumination
- White light TIRF, oblique light fluorescence, surface reflection interference contrast, and epi-fluorescence observations are switchable
- The wide wavelength band of white light makes multiple wavelength TIRF observation possible by changing the filter

ECLIPSE TS100/TS100-F

Apodized Phase Contrast objectives visualize minute details with greater resolution Also supports fluorescence and NAMC*

- Both high-luminescent LED (Eco-illumination) model and halogen lamp model are available
- Adopts CFI60 infinity optics for this class of microscope
- Apodized Phase Contrast objectives visualize minute details within a specimen
- Both TS100 and TS100-F support fluorescence microscopy
- Nikon Advanced Modulation Contrast (NAMC) observation is possible, enabling colorless and transparent samples in a plastic dish to be observed in high relief, a procedure not possible with DIC observation
- Eyepiece tube inclination and comfortable eye-point height for natural viewing posture when sitting or standing
- Low-profile 195mm-high stage with transparent acrylic stage ring for easy confirmation of objective in use
- Quintuple backward-facing nosepiece offers plenty of clearance for easy rotation

*Nikon Advanced Modulation Contrast

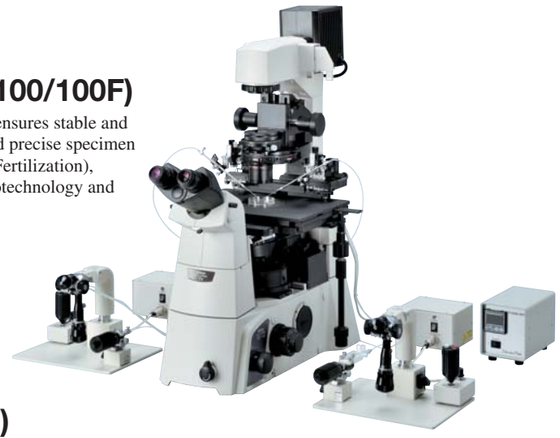
TS100 (Binocular tube model)

TS100-F (Trinocular tube model)

Oil Hydraulic Micromanipulation Systems

NT-88-V3 Series (for Ti-E/U/S, TS100/100F)

The NT-88-V3 series with compact and easy-to-assemble design ensures stable and smooth operation without needle drift. It provides microscopic and precise specimen micromanipulation for experiments in the fields of IVF (In Vitro Fertilization), especially ICSI (Intracytoplasmic Sperm Injection), transgenic biotechnology and electrophysiology.
(Manufactured by Narishige Co., Ltd.)



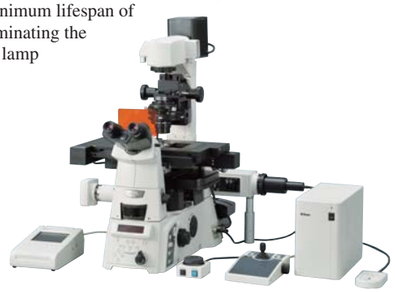
Water Hydraulic Micromanipulation System

MHW-3 (for Ti-E/U/S, TS100/100F)

Needle drift caused by changes in room temperature has been decreased to the lowest possible level. Optimized for long hours of micromanipulation, such as in electrophysiologic patch-clamp experiments.
(Manufactured by Narishige Co., Ltd.)

Epi-FI LED Illuminator (for Ti-E/U/S, Ni-E/U, FN1)

Equipped with an LED light, this epi-fluorescence illuminator requires zero warm-up time and ensures stable and quantitative brightness of illumination, thus is particularly suited to long periods of time-lapse imaging. It allows simultaneous lighting with multiple wavelengths and the intensity of each wavelength can be controlled. An LED has a minimum lifespan of 10,000 hours, eliminating the need for frequent lamp replacement.



HG Precentered Fiber Illuminator

Intensilight (for Ti-E/U/S, Ni-E/U, Ci-E/L/S, FN1, AZ100/100M)

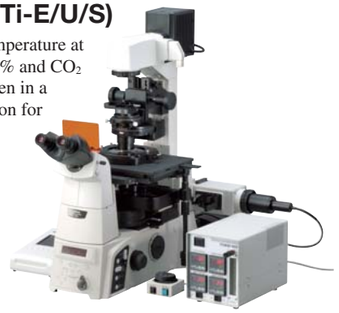
It comes equipped with a precentered, easy-to-replace mercury lamp that has a lifespan of up to 2,000 hours and is suitable for fluorescence observation. Motorized and manual models are both available.

C-HGFIE
(motorized type)

Stage Incubation System

INU Series (for Ti-E/U/S)

It sustains the internal temperature at 37ºC with humidity of 90% and CO_2 of 5% to keep the specimen in a stable and precise condition for about three days.
(Manufactured by Tokai Hit Co., Ltd.)



Thermal Plate Warmer

ThermoPlate TP Series (for Ti-E/U/S, TS100/100F)

A temperature controllable stage ring with a glass heating plate keeps the specimen at a set temperature. Temperature is adjustable from room temperature +5ºC to 50ºC in 0.1ºC increments.
(Manufactured by Tokai Hit Co., Ltd.)

Cell Culture Observation System

BioStation CT

Automated stem cell screening in culture environment

- Operations from culture to observation of cells run automatically under optimal conditions in the same incubator
- Culture vessels are transferred from the rack to the microscope stage and cell image is captured according to a user-configured schedule
- Remote observation and setting from outside the laboratory via a network is possible
- Captures micro images from 2x to 40x with phase contrast observation using apodized phase contrast (APC) optics and fluorescence observation using three-color LED illumination. A bird's eye macro view allows the entire vessel to be viewed from above
- High resolution whole vessel images can be acquired with Full Well Scan Observation. This mode allows automatic processing and stitching of images to reconstruct the entire image of the culture vessel, and quick and easy discovery of developing iPS colonies. Images are zoomed so that colonies can be seen without loss of resolution
- Optional image analysis software CL-Quant allows automatic cell detection from a phase contrast image, and enables identification and counting of iPS colonies

Time Lapse Imaging System

BioStation IM-Q

The perfect and simple solution for reliable time-lapse imaging

- A totally integrated cell incubation and time-lapse imaging system
- High-sensitivity cooled monochrome CCD camera captures bright, high-contrast images
- Accurate, reliable data acquisition provided by precision XYZ control and by eliminating the focus drift caused by the stage movement and temperature change
- Powerful and intuitive software. Effortless operations with ergo controller and mouse
- Stable, consistent control of temperature, humidity and CO_2 gas concentration maintains cell activity for long periods
- Exceptional phase contrast and fluorescence imaging quality
- Instant set-up. Space-saving design. No need for darkroom
- Convenient accessories include a vessel and chamber for multi-sample observation and built-in perfusion components

Motorized Advanced Research Microscope

ECLIPSE Ni-E (focusing stage model and focusing nosepiece model)

Automated imaging capability for most advanced observations

- High-precision motorized focusing supports automated Z-series acquisition
- Observation method can be changed using buttons on the microscope body. Microscope settings are automatically set to optimal positions according to selected magnification
- Various motorized accessories can be attached
- Stratum structure allows double layer mounting of a photoactivation unit and an epi-fluorescence attachment to enable simultaneous photoactivation and imaging
- High-speed motorized excitation/barrier filter wheel for multicolor imaging
- Exchangeable focusing mechanism from focusing stage to focusing nosepiece
- High optical performance: uniform and bright illumination using fly-eye optics
- Built-in, easy-to-reach image capture button. Angled operation buttons allow touch-type operations during observation

Ni-E (Focusing stage) configured with motorized epi-fluorescence illuminator, motorized condenser and motorized quadrocular tilting tube

Ni-E (Focusing nosepiece) configured with motorized stage, motorized epi-fluorescence illuminator, photoactivation unit, motorized quadrocular tilting tube and camera

Advanced Research Microscope

ECLIPSE Ni-U

Manual microscope with flexible selection of motorized options

- Motorized nosepiece, motorized epi-fluorescence cube turret and motorized shutter can be utilized
- Stratum structure allows double layer mounting of a back port unit and an epi-fluorescence attachment to enable simultaneous multichannel imaging with two cameras.
- High optical performance: uniform and bright illumination using fly-eye optics
- Built-in, easy-to-reach image capture button

Ni-U configured with ergonomic binocular tube

Clinical and Laboratory Microscopes

ECLIPSE Ci-E/Ci-L/Ci-S

Exceptional comfort for clinical and laboratory observation

- High-luminescent eco-friendly LED (Eco-illumination) for Ci-E/Ci-L and halogen illumination for Ci-S
- Ci-E offers motorized magnification switching and automatic light intensity reproduction, enabling use of motorized condenser
- Angle and extension adjustable ergonomic binocular tube ensures observation with natural posture. Eye-point height can be lifted using an eyelevel riser
- Stage height can be lowered by adding a nosepiece spacer, and locked for easy refocusing. Height-adjustable stage handle. Durable, scratch-resistant ceramic-coated stage
- Built-in capture button allows easy imaging with the DS series camera

Ci-E configured with ergonomic binocular tube

Ci-L configured with ergonomic binocular tube and DS series camera

Ci-S configured with ergonomic binocular tube

Clinical & Educational Microscope

ECLIPSE E200

Outstanding cost performance—striking image sharpness, operability and durability

- Both high-luminescent LED (Eco-illumination) model and halogen lamp model are available
- Adopts CFI60 infinity optics for this class of microscope. Plan objectives that excel in image flatness come standard
- One-touch refocusing stage for easier specimen handling
- Focusing knob and stage handle are low-positioned and equidistant from operator, permitting one-handed operation in natural posture
- Ergonomic binocular tube and eye-level risers are available for adjusting the eyepoint
- Anti-mold treated
- E200-F (model with field diaphragm) is also available
- Various accessories are available, such as dedicated epi-fluorescence attachment
- Halogen lamp model is compliant with 100V-240V (multi-voltage)

E200 (model without field diaphragm)

Upright Microscope

Educational Microscope

ECLIPSE E100

High optical quality, simple operation and rigid design

- Both high-luminescent LED (Eco-illumination) model and halogen lamp model are available
- CFI optical system and dedicated objectives for flat images
- Siedentopf-type eyepiece tube and eye level adjustments; digital camera attachable to trinocular eyepiece tube
- Phase contrast observation for high-contrast viewing of transparent and colorless specimens
- Anti-mold treatment for objectives, eyepieces, and eyepiece tube

E100 configured with binocular tube

Polarizing Microscopes

ECLIPSE LV100N POL/Ci-POL/E200POL

- CFI60 optics deliver world-class optical performance
- Excellent basic performance, operability, durability and, above all, outstanding image sharpness
- LV100N POL is a research polarizing microscope that boasts twice the rigidity of conventional models and a brightness exceeding 100W (12V-50W model with centering quintuple nosepiece). The built-in Fly-Eye optics ensures uniform illumination, making it ideal for digital imaging
- ECLIPSE Ci-POL is compact yet offers high functionality, such as a nosepiece with DIN standard compensator slot (6V-30W model with centering quintuple nosepiece). Built-in capture button allows easy imaging with DS series cameras
- E200POL is a cost-efficient and extremely compact model (6V-20W/30W multi-voltage model with quadruple nosepiece)

LV100N POL (diascopic illumination type)

Ci-POL (diascopic illumination type)

E200 POL (diascopic illumination type)

Microscope for Asbestos Identification

Polarizing/Dispersion Microscope

ECLIPSE LV100ND POL/DS

Dispersion staining microscopy that aids in the identification of asbestos

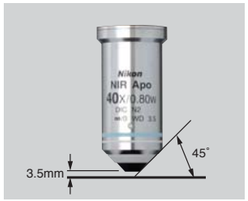
- Characteristic dispersion colors of each asbestos type corresponding to the refraction index of the immersion liquid can be observed using the phase contrast condenser and objectives (10x and 40x) for dispersion staining microscopy
- Qualitative asbestos analysis is possible by determination of birefringence and elongation (positive/negative); measurement of extinction angle, refractive index, and birefringence magnitude (retardation); observation of pleochroism

Microscope for Patch Clamp Experiments

ECLIPSE FN1

Dedicated patch-clamp microscope with I-shaped body design—more room for smooth electrode manipulation

- Corrects axial chromatic aberration up to IR light (to 850nm). New 40x and 60x objectives for crisp high resolution IR-DIC imaging
- 100x objective with NA 1.1 and working distance 2.5mm comes with a correction function for depth- and thermally-induced aberrations
- Vertical motion nosepieces enables magnification changes without moving Petri dish (15mm or less in height)
- Easy switching between IR light and reflected illumination
- With an optional variable magnification double port (0.35x, 2x, 4x), both wide field and high magnification observations can be carried out with a 16x objective alone
- Deep imaging of living specimens is possible in configuration with multiphoton confocal system A1 MP+/A1R MP+



All objectives have wide approach angles and long working distances (45° and 3.5mm with 40x objective).

Configuration with Narishige micromanipulators and epi-fluorescence attachment

SMZ25/SMZ18

- Motorized zoom model SMZ25 is the first stereoscopic microscope to offer a large 25:1 zoom ratio. Zoom ratio of manual zoom model SMZ18 is 18:1
- Optical path of both eyes boast high NA of up to 0.156 with the SHR Plan Apo 1x objective and SMZ25 zooming body
- Fly eye lens employed in the epi-fluorescence attachment ensures uniform brightness over the entire field of view even at the lowest magnifications
- Motorized focus and zoom operation (SMZ25)
- User-friendly remote control (SMZ25)
- Total magnification 3.15-315x (SMZ25), 3.75-270x (SMZ18), depending on objective used
- Compatible with a camera

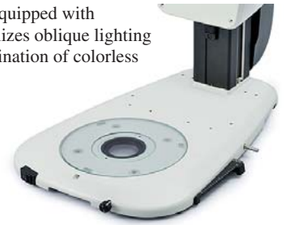
SMZ25 configured with motorized epi-fluorescence attachment and LED diascopec illumination base

SMZ18 configured with plain stand

Accessories for SMZ25/SMZ18

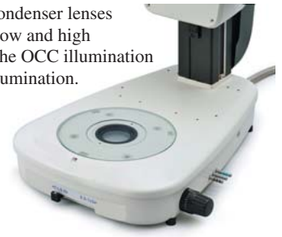
LED Diascopic Illumination Base

The slim LED DIA Base is equipped with OCC illumination, which utilizes oblique lighting to enable high-contrast illumination of colorless and transparent specimens.



Fiber Diascopic Illumination Base

The Fiber DIA base features condenser lenses that can be switched between low and high magnifications. Furthermore, the OCC illumination system allows high-contrast illumination.



Ring LED Illuminator

Ring LED illuminator is equipped with high-intensity, long-life (20,000 hours) LEDs. The illuminator's dial adjusts the intensity of the white LED.

Darkfield Unit

Darkfield observation is possible simply by attaching the darkfield unit to the base.

Simple Polarizing Attachment

The analyzer is attached to the objective and the polarizer to the base or stand to enable polarized observations.

SMZ1000

- Total magnification 4-480x
- Zoom ratio 10:1
- Compatible with a camera
- Exchangeable eyepiece tube
- Exchangeable objective
- Compatible with various accessories

Configured with C-PS160 plain stand

SMZ800

- Total magnification 5-378x
- Zoom ratio 6.3:1
- Compatible with a camera
- Exchangeable eyepiece tube
- Exchangeable objective
- Compatible with various accessories

Configured with C-PS plain stand

SMZ745/SMZ745T

- Total magnification 3.35-300x
- Zoom ratio 7.5:1
- Compatible with a camera (SMZ745T)
- Eyepiece inclination 45°

SMZ745T configured with C-PS plain stand

SMZ745 configured with C-PS plain stand

SMZ660

- Total magnification 4-300x
- Zoom ratio 6.3:1
- Eyepiece inclination 60°

SMZ660 configured with C-PS plain stand

SMZ445

- Total magnification 4-70x
- Zoom ratio 4.4:1
- Eyepiece inclination 45°

SMZ445 configured with hybrid LED stand

SMZ460

- Total magnification 3.5-60x
- Zoom ratio 4.3:1
- Eyepiece inclination 60°

SMZ460 configured with hybrid LED stand

Multi-purpose Zoom Microscope

Multizoom AZ100/AZ100M/AZ-C2⁺

Continuously switchable magnifications, extending from macro to micro observation of the same specimen

- Covers a magnification range of 5x to 400x, thanks to 8x zooming optics and a unique triple nosepiece
- True on-axis observation and image capture are possible in the macro region
- Comes standard with an aperture stop
- Tilting trinocular eyepiece tubes can accommodate a digital camera
- The dedicated stands combine two focuses, one with an 85-mm stroke on the column side and one with a 10-mm stroke on the front stage, enabling observation of tall samples
- AZ100M with motorized focusing and motorized zooming makes it easy to capture Extended Depth of Focus (EDF) images
- AZ-C2⁺ offers high-definition macro confocal image capture in a single shot. Deep imaging of in-vivo whole specimens is also possible

AZ100M configured with Epi-Fl attachment

AZ100 configured with Epi-Fl attachment

AZ-C2⁺

Confocal Microscope System

Multiphoton Confocal Microscope

A1 MP⁺/A1R MP⁺

High-speed and high-resolution imaging of deep area in a living specimens

- A1 MP⁺ is equipped with a galvano (non-resonant) scanner that enables high-resolution imaging of up to 4096 x 4096 pixels
- A1R MP⁺ is equipped with both a galvano scanner and a resonant scanner, allowing ultrafast imaging of up to 420 fps (512 x 32 pixels)
- Deep imaging with high-sensitivity NDD (non-descanned detector); diascopic NDD is also available for Ni-E
- Ultrasensitive GaAsP (gallium arsenide phosphide) NDD allows clear imaging in deeper areas than ever before
- Sharper, brighter imaging with high NA objectives deposited with Nano Crystal Coat
- High-speed, high-precision unmixing with NDD
- Multiphoton laser beam can be automatically aligned with a single click

Configured with Ni-E

Confocal Microscope Systems

Confocal Microscope

A1⁺/A1R⁺

A1⁺ for high-resolution imaging, A1R⁺ for ultrafast and high-resolution imaging

- A1⁺ is equipped with a galvano scanner that enables high-resolution imaging of up to 4096 x 4096 pixels, and high-speed imaging of 10 fps (512 x 512 pixels)
- A1R⁺ is equipped with both a galvano scanner and a resonant scanner, allowing ultrafast imaging of up to 420 fps (512 x 32 pixels)
- With the VAAS pinhole unit, flare can be eliminated and image brightness retained. Moreover, different sectioning can be simulated after image acquisition
- Dichroic mirror with 30% increased fluorescence efficiency provides high image quality

Configured with Ti-E

True Spectral Imaging Confocal Microscope

A1si⁺/A1Rsi⁺

High-performance spectral detector supports simultaneous excitation of multiple wavelengths

- Acquisition of 32 channels (512 x 32 pixels) at 24 fps in a single scan
- Accurate, real-time spectral unmixing
- Simultaneous excitation of four lasers
- V-filtering function adjusts total intensity of up to four desired spectral ranges individually, providing flexibility to handle new fluorescence probes

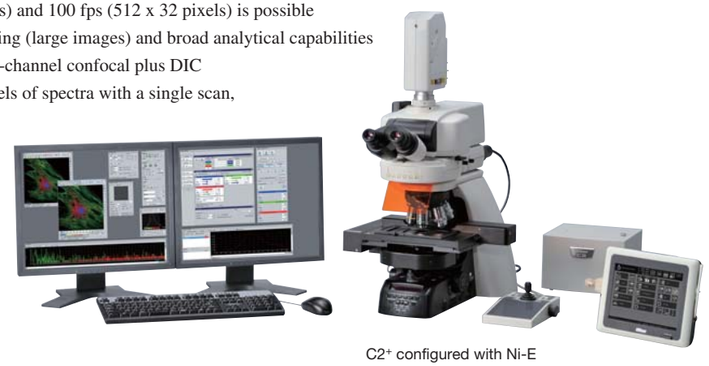
Configured with Ti-E

Confocal Microscope

C2⁺/C2si⁺

Powerful personal confocal microscope, essential for laboratories

- Highly efficient scanning head and detector provide noiseless, high contrast images
- High-speed imaging of 8 fps (512 x 512 pixels) and 100 fps (512 x 32 pixels) is possible
- With a host of functions, such as image stitching (large images) and broad analytical capabilities
- 4-channel simultaneous acquisition, such as 3-channel confocal plus DIC
- Spectral detector for C2si⁺ acquires 32-channels of spectra with a single scan, enabling unmixing of overlapped spectra



C2⁺ configured with Ni-E

Digital Camera System for Microscopes

Digital Sight Series

The Digital Sight series offers a choice of five camera heads and two control units, enabling an image capturing system to be assembled to suit each use.

Ultrahigh-resolution Cooled Color Camera Head
DS-Ri1

- 12.7-megapixel, 2200TV line high-definition images
- Faithful reproduction of specimen color
- Smooth display of live images
- Reduces heat noise; captures fluorescence and darkfield images clearly

High-definition Color Camera Head
DS-Fi2

- High-definition 5.0-megapixel CCD
- High resolution and high frame rate
- High dynamic range and accurate color reproduction

High-definition Cooled Color Camera Head
DS-Fi1c

- Cooling mechanism enables it to capture fluorescence and darkfield images clearly
- High-definition 5.0-megapixel CCD

High-speed Color Camera Head
DS-Vi1

- High-frame-rate, 2.0-megapixel CCD
- Suitable for monitoring of microscopy images

High-sensitivity Cooled Monochrome Camera Head
DS-Qi1

- High sensitivity equivalent to ISO 800
- Cooling mechanism reduces dark current to 0.7e-/pixel/s and readout noise to 8e- rms, realizing a wide dynamic range
- Superior quantitivity with linearity of >98%

PC-use Control Unit
DS-U3

Configured with ECLIPSE Ni-U

- Versatile image capture, processing, measurement and analysis when coupled with imaging software NIS-Elements
- High-speed image transfer for PC via IEEE 1394b connection
- Compact, space-saving design
- Allows control of Nikon motorized microscopes

Standalone Control Unit
DS-L3

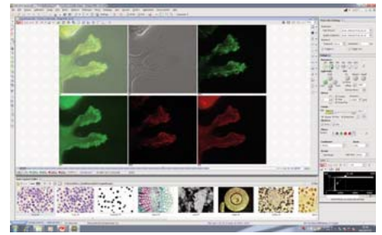
Configured with ECLIPSE Ci-L

- Built-in high-definition 8.4-in. large LCD monitor
- Camera can be controlled with mouse operation or touch panel operation, eliminating the necessity of a PC connection
- Various digital interfaces including USB 2.0 connection
- Pre-programmed imaging modes for different observation methods
- Allows control of motorized devices on Ni-E and Ni-U

Imaging Software

NIS-Elements

NIS-Elements is an integrated platform of imaging software developed by Nikon to achieve comprehensive control of microscope image capture and document data management.
NIS-Elements handles multidimensional imaging tasks flawlessly with support for capture, display, peripheral device control, and data management & analysis of images (up to six-dimensional images).



Available in three distinct packages scaled to meet user needs and applications:

Ar *NIS-Elements Advanced Research*

NIS-Elements AR is optimized for advanced research applications. It features fully automated acquisition and device control through full 6D (X, Y, Z, Lambda (Wavelength), Time, Multipoint) image acquisition and analysis.

Br *NIS-Elements Basic Research*

NIS-Elements BR is suited for standard research applications. It features acquisition and device control through 4D (up to four dimensions can be selected from X, Y, Z, Lambda (Wavelength), Time, Multipoint) acquisition.

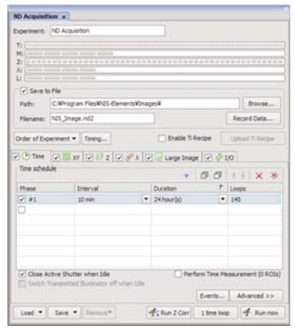
D *NIS-Elements Documentation*

NIS-Elements D supports color documentation requirements in bio-research, clinical and industrial applications, with basic measuring and reporting capabilities.

Various convenient plug-ins are available for advanced imaging and analysis capabilities.

Multidimensional Capturing

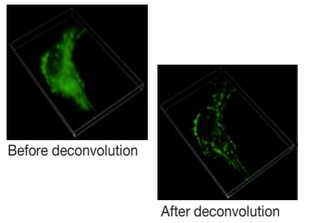
Up to 6D image acquisition combining dimensions such as X, Y, Z, time, wavelength and multipoint is easily set using the intuitive GUI.



3D/2D Deconvolution

Haze and blur of the fluorescence image can be eliminated from the captured 3D image or from the 2D live preview image. (Separate plug-in for 3D and 2D)

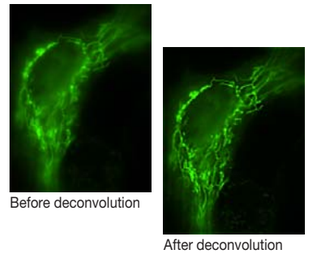
3D deconvolution



Before deconvolution

After deconvolution

2D deconvolution

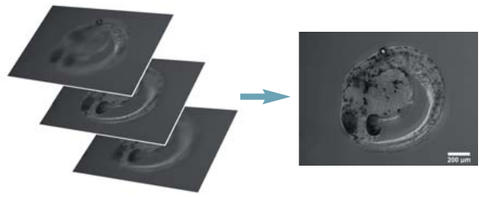


Before deconvolution

After deconvolution

Extended Depth of Focus

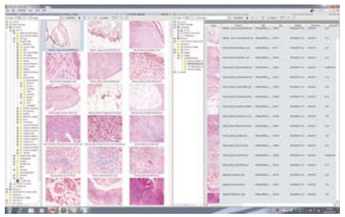
With the Extended Depth of Focus (EDF) plug-in, images that have been captured in a different Z-axis using a motorized stage can be used to create an all-in-focus image. Also, it is possible to create stereovision images & 3D surface images to achieve virtual 3D imaging.



All-in-focus image created from a sequence of Z-stack images

Database

NIS-Elements has a powerful image database module that supports image and meta data. Various databases & tables can easily be created and images can be saved to the database via one simple mouse-click. Filtering, sorting and multiple grouping are also available according to the database field given for each image.



CFI60 Objectives

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC*4	Phase contrast	Polarizing	Fluorescence		Ti-E PFS
														Visible light	UV	
Achromat	Brightfield (CFI)	4x		0.10	30.00	—			◎				△	○		
		10x		0.25	7.00	—			◎	△			△	○		
		10x DS*7		0.25	7.00	—			○				△	○		
		LWD 20x		0.40	3.90	0.17			◎	○●			△	○		
		40x		0.65	0.65	0.17		✓	◎	○●			△	○		
		LWD 40xC		0.55	2.7-1.7	0-2.0	✓		◎	○●			△	○		
		60x		0.80	0.30	0.17		✓	◎	●			△	○		
		100x Oil	Oil	1.25	0.23	0.17		✓	◎				△	○		
		100xSH (with iris)	Oil	0.5-1.25	0.23	0.17		✓	◎	○●			△	○		
	Polarizing (CFI)	P 4x		0.10	30.00	—			◎				◎	○		
		P 10x		0.25	7.00	—			◎	△			◎	○		
		LWD P 20x		0.40	3.90	0.17			◎	○●			◎	○		
		P 40x		0.65	0.65	0.17		✓	◎	○●			◎	○		
		P 100x Oil	Oil	1.25	0.23	0.17		✓	◎				◎	○		
	Phase contrast (CFI)	DL 10x		0.25	7.00	—			○	△		◎ PH1	△	△		
		LWD DL 20x		0.40	3.90	0.17			○	○●		◎ PH1	△	△		
		LWD DL 20xF		0.40	3.10	1.2			○			◎ PH1	△	△		
		DL 40x		0.65	0.65	0.17		✓	○	○●		◎ PH2	△	△		
		LWD DL 40x		0.55	2.7-1.7	0-2.0	✓		○	○●		◎ PH2	△	△		
		DL 100x Oil	Oil	1.25	0.23	0.17		✓	○			◎ PH3	△	△		
		BM 10x		0.25	7.00	0.7			○			◎ PH1	△	△		
	Apodized phase contrast (CFI)	ADL 10x		0.25	6.20	1.2			○			◎ PH1	△	△		
		LWD ADL 20xF		0.40	3.10	1.2			○			◎ PH1	△	△		
		LWD ADL 40xF		0.55	2.10	1.2			○			◎ PH1	△	△		
		LWD ADL 40xC		0.55	2.7-1.7	0-2.0	✓		○	○●		◎ PH2	△	△		
	Advanced modulation contrast (CFI)	NAMC 10x		0.25	6.20	1.2			○					△		
		LWD NAMC 20xF		0.40	3.10	1.2			○					△		
		LWD NAMC 40xC		0.55	2.7-1.7	0-2.0	✓		○					△		
Plan Achromat	Brightfield (CFI Plan)	UW 1x		0.04	3.20	—			◎				△	△		
		UW 2x		0.06	7.50	—			◎				△	△		
		4x		0.10	30.00	—			◎				△	○		
		10x		0.25	10.50	—			◎	△			△	○		
		20x		0.40	1.20	0.17			◎	○●			△	○		
		40x		0.65	0.56	0.17		✓	◎	○●			△	○		
		50x Oil	Oil	0.90	NCG0.35	—		✓	◎	●			△	○		
		100x Oil	Oil	1.25	0.20	0.17		✓	◎				△	○		
		LWD IMSI 100xC		0.85	1.3-0.95	0.6-1.3	✓		◎		○*6			○		
	Phase contrast (CFI Plan)	DL 10x		0.25	10.50	—			○	△		◎ PH1	△	△		
		DL 20x		0.40	1.20	0.17			○	○●		◎ PH1	△	△		
		DL 40x		0.65	0.56	0.17		✓	○	○●		◎ PH2	△	△		
		DL 100x Oil	Oil	1.25	0.20	0.17		✓	○			◎ PH3	△	△		
	No cover glass (CFI Plan)	NCG 40x		0.65	0.48	0		✓	◎	○●			△	○		
		NCG 60x (CF objective)*1		0.85	0.35	0		✓	◎	●			△	○		
		NCG 100x		0.90	0.26	0		✓	◎	●			△	○		
	Super long WD (CFI L Plan EPI)	SLWD 20x		0.35	24.00	0			◎	○●			△	○		
		SLWD 50x		0.45	17.00	0			◎	○●			△	○		
		SLWD 100x		0.70	6.50	0			◎	○●			△	○		
S Plan Fluor*2	Brightfield (CFI S Plan Fluor)	ELWD 20xC		0.45	8.2-6.9	0-2.0	✓		◎	○●	○		○	◎	◎	●
		ELWD 40xC		0.60	3.6-2.8	0-2.0	✓		◎	○●	○		○	◎	◎	●
		ELWD 60xC		0.70	2.6-1.8	0.1-1.3	✓		◎	○●	○		○	◎	◎	
	Apodized phase contrast (CFI S Plan Fluor)	ELWD ADM 20xC		0.45	8.2-6.9	0-2.0	✓		○	○●		◎ PH1		○	○	●
		ELWD ADM 40xC		0.60	3.6-2.8	0-2.0	✓		○	○●		◎ PH2		○	○	●
		ELWD ADL 60xC		0.70	2.6-1.8	0.1-1.3	✓		○	○●		◎ PH2		○	○	
	Advanced modulation contrast (CFI S Plan Fluor)	ELWD NAMC 20xC		0.45	7.40	0-2.0	✓		○					○		
		ELWD NAMC 40xC		0.60	3.10	0-2.0	✓		○					○		
S Fluor*3	Brightfield (CFI S Fluor)	4x		0.20	15.50	—			◎				△	◎	◎ Wide	●
		10x		0.50	1.20	0.17		✓	◎	○●	○		△	◎	◎ Wide	●
		20x		0.75	1.00	0.17		✓	◎	○●	○		△	◎	◎ Wide	●
		40x		0.90	0.30	0.11-0.23	✓	✓	◎	●	○		△	◎	◎ Wide	
		40x Oil	Oil	1.30	0.22	0.17		✓w/stopper	◎		○		△	◎	◎ Wide	●
		100xSH (with iris)	Oil	0.5-1.3	0.20	0.17		✓	◎	○●			△	◎	◎ Wide	
Universal Plan Fluor	No cover glass polarizing (CFI LU Plan Fluor EPI)	P 5x		0.15	23.50	—			◎				◎	◎	◎	
		P 10x		0.30	17.50	0			◎	△			◎	◎	◎	
		P 20x		0.45	4.50	0			◎	○●			◎	◎	◎	
		P 50x		0.80	1.00	0		✓	◎	●			◎	◎	◎	
		P 100x		0.90	1.00	0		✓	◎	●			◎	◎	◎	

*1 To use with the CFI60 optics microscope (not possible in E400), an objective conversion adapter is necessary.
*2 Axial chromatic aberration is corrected in shorter wavelength ranges than the Plan Fluor series to improve image clarity.
*3 Transmits an ultraviolet light up to a 340nm wavelength
*4 See page 20 for compatible prisms
*5 Dedicated for FN1 (CFI75 objective)
*6 Compatible with IMSI only
*7 Compatible with dispersion staining microscopy only

Note 1. Model numbers
The below letters, when attached to the end of model numbers, indicate the respective features.

F: for use with 1.2mm-thick cover glass
C: with correction ring
NCG: for use without cover glass
SH: with iris
WI: water immersion type
W: water dipping type
Mi: multi immersion (oil, water, glycerin) type

Note 2. Cover glass thickness
—: can be used without cover glass
0: use without cover glass

Note 3. Darkfield microscopy
Possible with the following
△: universal condenser (dry) and darkfield ring
○: above and darkfield condenser (dry)
●: darkfield condenser (oil)

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC*4	Phase contrast	Polarizing	Fluorescence			Ti-E PFS
														Visible light	UV	NIR	
Plan Fluor	Brightfield (CFI Plan Fluor)	4x		0.13	17.10	—			◎				△	◎	◎		
		10x		0.30	16.00	0.17			◎	△	○			○	◎	◎	●
		20x		0.50	2.10	0.17			◎	○●	○			○	◎	◎	
		20xA MI	Oil, water glycerin,	0.75	0.51-0.35 0.51-0.34 0.49-0.33	0-0.17	✓	✓	◎	○●	○			○	◎	◎	
		40x		0.75	0.66	0.17		✓	◎	○●	○			○	◎	◎	●
		40x DS2*7		0.75	0.66	0.17		✓	○						○	○	
		40x Oil	Oil	1.30	0.20	0.17		✓w/stopper	◎		○	EXT PH3-40x		○	◎	◎	●
		60x		0.85	0.40-0.31	0.11-0.23	✓	✓	◎	●	○			○	◎	◎	
		60xSH (with iris)	Oil	0.50-1.25	0.22	0.17		✓	◎	○●	○			○	◎	◎	
		100x Oil	Oil	1.30	0.16	0.17		✓w/stopper	◎		○			○	◎	◎	●
		100xSH (with iris)	Oil	0.50-1.30	0.20	0.17		✓	◎	○●	○			○	◎	◎	
	Phase contrast (CFI Plan Fluor)	DL 4x		0.13	16.40	1.2			○			◎ PHL		○	○		
		DLL 10x		0.30	16.00	0.17			○	△		◎ PH1		○	○		●
		DL 10x		0.30	15.20	1.2			○	△		◎ PH1		○	○		
		DLL 20x		0.50	2.10	0.17			○	○●		◎ PH1		○	○		
		DLL 40x		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		●
		DM 40xDS		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		
		DLL 100x Oil	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○		●
		BM 40x AS		0.75	0.66	0.17		✓	○			◎ PH2		○	○		
	Apodized phase contrast (CFI Plan Fluor)	ADH 100x Oil	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○		●
Plan Apochromat	Brightfield (CFI Plan Apo)	λ 2x		0.10	8.50	—			◎				○	◎	△	◎	
		λ 4x		0.20	20.00	—			◎				○	◎	△	◎	●
		λ 10x		0.45	4.00	0.17			◎	△	○		○	◎	△	◎	●
		λ 20x		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△	◎	●
		VC 20x		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△		●
		λ 40x		0.95	0.21 (0.25-0.16)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	●
		λ 60x		0.95	0.15 (0.21-0.11)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	
		λ 60x Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-60x	○	◎	△	◎	●
		VC 60xA WI	Water	1.20	0.31-0.28	0.15-0.18	✓	✓	◎	●	○	EXT PH3-60x	○	◎	◎		●
		IR 60xWI	Water	1.27	0.17	0.15-0.19	✓	✓	◎		○	EXT PH3-60x	○	○	△	◎	●
		λ 100x Oil	Oil	1.45	0.13	0.17		✓	◎		○	EXT PH3-100x	○	◎	△	◎	●
		VC 100x Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-100x	○	◎	△		●
		NCG 100x Oil	Oil	1.40	0.16	0		✓	◎		○		○	◎	△		
	Phase contrast (CFI Plan Apo)	λ DM 20x		0.75	1.00	0.17		✓	○	○●		◎PH2		○	△	○	●
		λ DM 40x		0.95	0.21 (0.25-0.16)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	●
		λ DM 60x		0.95	0.15 (0.21-0.11)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	
		λ DM 60x Oil	Oil	1.40	0.13	0.17		✓	○			◎PH3		○	△	○	●
		λ DM 100x Oil	Oil	1.45	0.13	0.17		✓	○			◎PH3		○	△	○	●
Apochromat	Confocal (CFI Apo)	40xWI λS	Water	1.25	0.18	0.15-0.19		✓	◎		○	EXT PH3-40x	○	◎	◎		●
		LWD 40xWI λS	Water	1.15	0.60	0.15-0.19	✓	✓	◎	●	○	EXT PH3-40x	○	◎	○		●
		60x Oil λS	Oil	1.40	0.14	0.17	✓	✓	◎		○	EXT PH3-60x	○	◎	◎		●
	Evanescent (CFI Apo)	TIRF 60x Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.15-0.21(37℃)	✓		◎		○	EXT PH4-60x	○	◎	△		●
		TIRF 100x Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.14-0.20(37℃)	✓		◎		○	EXT PH4-100x	○	◎	△		●

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC*4	Phase contrast	Polarizing	Fluorescence		Near-infrared DIC
														Visible light	UV	
Water Dipping	Confocal (CFI Apo)	25xW MP	Water	1.10	2.00	0	✓		◎	●	○		○	◎	○	○
	Brightfield (CFI Plan Fluor)	10xW	Water	0.30	3.50	0			◎	△	○		○	◎	◎	○
	Brightfield (CFI Fluor)	20xW	Water	0.50	2.00	0			◎	○●	○		○	◎	◎	○
		40xW	Water	0.80	2.00	0			◎	●	○		○	◎	◎ Wide	○
		60xW	Water	1.00	2.00	0			◎	●	○		○	◎	◎	○
	Brightfield (CFI Apo)	40xW NIR	Water	0.80	3.50	0			◎	●	○		○	◎	△	◎
		60xW NIR	Water	1.00	2.80	0			◎	●	○		○	◎		◎
	Brightfield (CFI Plan)	100xW	Water	1.10	2.50	0	✓		◎	●	○		○	◎		○
	Phase contrast (CFI Fluor)	DLL 40xW	Water	0.80	2.00	0			○	●		◎ PH2		○	○	○
	Brightfield (CFI75)	LWD 16xW*5	Water	0.80	3.00	0			◎	●	○		○	◎	○	○

Note 4. Phase rings are classified by objective NA
PHL: for Plan Fluor 4x
PH1: NA 0.25 - 0.5
PH2: NA 0.55 - 0.95
PH3: NA 1.0 - 1.40
PH4: NA 1.45 - 1.49
EXT: compatible with external phase contrast of the Ti series

Note 5. Fluorescence microscopy (UV)
△: possible with visible light that has a longer wavelength than the excitation light used for DAPI
○: suitable
◎: recommended for best results
Wide: high transmittance with an ultraviolet wavelength range of up to 340nm

Note 6.
Brightfield/DIC/Polarizing/Fluorescence (visible light) microscopy
△: possible but not recommended
○: suitable
◎: recommended for best results

Note 7. Simple polarizing
△: possible but not recommended
○: suitable
◎: retardation measurement is possible with a polarizing microscope

Note 8. Ti-E PFS
●: compatible with PFS

Combinations of DIC Prisms and Objectives

For Ti series inverted microscopes

		System Condenser LWD Dry, Motorized System Condenser LWD Dry						HNA Condenser Lens Dry				HNA Condenser Lens Oil			
		Standard		High Contrast		High Resolution		Standard		High Resolution		Standard		High Resolution	
		Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slide	Condenser Module	DIC Slider	Condenser Module	DIC Slider
10x	Plan Fluor 10x S Fluor 10x Plan Apo λ 10x	LWD N1 Dry	10x	—				—				—			
20x	Plan Fluor 20x S Fluor 20x Plan Fluor 20xA MI Plan Apo λ 20x Plan Apo VC 20x	LWD N2 Dry	20x	LWD N1 Dry	20x-C			HNA N2 Dry	20x			HNA N2 Oil	20x		
	S Plan Fluor ELWD 20xC	LWD N1 Dry	20x II	—				—				—			
40x	Plan Fluor 40x S Fluor 40x Plan Apo λ 40x Apo LWD 40xWI λS	LWD N2 Dry	40x I	LWD N1 Dry	40x I-C			HNA N2 Dry	40x I			HNA N2 Oil	40x I		
	Plan Fluor 40x Oil S Fluor 40x Oil Apo 40xWI λS		40x II						40x II				40x II		
	S Plan Fluor ELWD 40xC	LWD N1 Dry	40x IV					—				—			
60x	Plan Apo λ 60x Apo TIRF 60x Oil	LWD N2 Dry	60x I			LWD NR Dry	60x I-R	HNA N2 Dry	60x I	HNA NR Dry	60x I-R	HNA N2 Oil	—	HNA NR Oil	—
													60x I		60x I-R
	Plan Fluor 60x Oil Plan Fluor 60x Plan Apo λ 60x Oil Apo 60xH λS		60x II				60x II-R		60x II		60x II-R		60x II		60x II-R
	Plan Apo VC 60xA WI Plan Apo IR 60xWI		60x IV				60x IV-R		60x IV		60x IV-R		60x IV		60x IV-R
	S Plan Fluor ELWD 60xC	LWD N1 Dry	60x III			—		—		—		—		—	
100x	Plan Apo λ 100x Oil Plan Apo VC 100x Oil Apo TIRF 100x Oil	LWD N2 Dry	100x I			LWD NR Dry	100x I-R	HNA N2 Dry	100x I	HNA NR Dry	100x I-R	HNA N2 Oil	100x I	HNA NR Oil	100x I-R
	Plan Fluor 100x Oil Plan Fluor 100x Oil Iris		100x II				100x II-R		100x II		100x II-R		100x II		100x II-R
	Plan LWD IMSI 100xC		100x III			—		—		—		—		—	

For Ni-E (focusing stage)/Ni-U upright microscopes

		Universal Condenser Dry/Motorized Universal Condenser Dry						DIC Condenser Oil			
		Standard		High Contrast		High Resolution		Standard		High Resolution	
		Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider
10x	Plan Fluor 10x S Fluor 10x Plan Apo λ 10x	N1 Dry	10x	—				—			
20x	Plan Fluor 20x Plan Fluor 20xA MI S Fluor 20x Plan Apo λ 20x Plan Apo VC 20x	N2 Dry	20x	N1 Dry	20x-C			N2 Oil	20x		
	S Plan Fluor ELWD 20xC	N1 Dry	20x II	—				—			
40x	Plan Fluor 40x S Fluor 40x Plan Apo λ 40x Apo LWD 40xWI λS	N2 Dry	40x I	N1 Dry	40x I-C			N2 Oil	40x I		
	Plan Fluor 40x Oil S Fluor 40x Oil Apo 40xWI λS		40x II						40x II		
	S Plan Fluor ELWD 40xC	N1 Dry	40x IV					—			
60x	Plan Apo λ 60x Apo TIRF 60x Oil	N2 Dry	60x I			NR Dry	60x I-R	N2 Oil	60x I	NR Oil	60x I-R
	Plan Fluor 60x Oil Plan Fluor 60x Plan Apo λ 60x Oil Apo 60xH λS		60x II				60x II-R		60x II		60x II-R
	S Plan Fluor ELWD 60xC	N1 Dry	60x III			—		—		—	
100x	Plan Apo λ 100x Oil Plan Apo VC 100x Oil Plan Apo 100x NCG Oil Apo TIRF 100x Oil	N2 Dry	100x I			NR Dry	100x I-R	N2 Oil	100x I	NR Oil	100x I-R
	Plan Fluor 100x Oil Plan Fluor 100x Oil Iris		100x II				100x II-R		100x II		100x II-R

For Ni-E (focusing nosepiece)/FN1 fixed stage microscopes

		FN-C LWD Condenser	
		Condenser Module	DIC Slider
10x	Plan Fluor 10xW	N1 Dry	10x
16x	LWD 16xW (CFI75)	N2 Dry	16x I
20x	Fluor 20xW		20x
25x	Apo 25xW MP		25x I
40x	Apo 40xW NIR Fluor 40xW		40x III
60x	Apo 60xW NIR Fluor 60xW		60x I
100x	Plan 100xW		100x-III

Epi-fluorescence Filter Cubes

Filter Cube Characteristics

	Filter Cubes	Wavelengths	Characteristics	i series, Ti series	E series, TS100
UV	UV-1A	EX 365/10 DM 400 BA 400	•Narrow band pass—only 365nm (i line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching	✓	✓
	UV-2A	EX 330-380 DM 400 BA 420	•Standard filter block for UV	✓	✓
	UV-2B	EX 330-380 DM 400 BA 435	•Darker background than UV-2A	✓	✓
	UV-2E/C (DAPI)	EX 340-380 DM 400 BA 435-485	•For DAPI, cutting off FITC (green) and TRITC (red) •Soft-coated type for high signal/noise •Band-Pass Barrier Filter used to cut off green and red	✓	✓
V	V-2A	EX 380-420 DM 430 BA 450	•Standard filter block for V	✓	✓
BV	BV-1A	EX 435/10 EM 455 BA 470	•Narrow band pass—only 435nm (g line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching	✓	
	BV-2A	EX 400-440 DM 455 BA 470	•Standard filter block for BV	✓	✓
B	B-1A	EX 470-490 DM 505 BA 520	•Narrower excitation range than B-2A •FITC+Counter-stain (TRITC, PI)	✓	
	B-1E	EX 470-490 DM 505 BA 520-560	•For FITC (green), cutting off Rhodamine red •Band-Pass Barrier Filter used to cut off red	✓	
	B-2A	EX 450-490 DM 505 BA 520	•Standard filter block for B •For FITC + Counter-stain (TRITC, PI)	✓	✓
	B-2E	EX 450-490 DM 505 BA 520-560	•Similar to FITC •For FITC (green), cutting off Rhodamine red •Band-Pass Barrier Filter used to cut off red		✓
	B-2E/C (FITC)	EX 465-495 DM 505 BA 515-555	•Soft coated type for high signal/noise •For FITC (green), cutting off Rhodamine red •Band-pass Barrier Filter used to cut off red	✓	✓
	B-3A	EX 420-490 DM 505 BA 520	•Wide band pass—recommended for halogen illumination only	✓	✓
G	G-1B	EX 546/10 DM 575 BA 590	•Narrow band pass—only 546nm (e line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching	✓	✓
	G-2A	EX 510-560 DM 575 BA 590	•Standard filter block for G	✓	✓
	G-2B	EX 510-560 DM 575 BA 610	•610nm barrier provides darker background and deep red emission	✓	
	G-2E/C (TRITC)	EX 540/25 DM 565 BA 605/55	•For TRITC (Rhodamine) •Soft coated type for high signal/noise •Band-Pass Barrier Filter used to cut off reds above 643nm	✓	✓
Y	Y-2E/C (Texas Red)	EX 540-580 DM 595 BA 600-660	•For Texas Red® •Soft coated type for high signal/noise •Band-Pass Barrier Filter used to cut off reds above 660nm	✓	✓

Filter Cubes for Fluorescent Protein

Filter Cubes	Wavelengths	i series, Ti series	E series, TS100
BFP	EX380/30, DM420, BA460/50	✓	
CFP	EX436/20, DM455, BA480/40	✓	
CFP HQ*	EX420-445, DM450, BA460-510	✓	
GFP-L	EX480/40, DM505, BA510	✓	✓
GFP-B	EX480/40, DM505, BA535/50	✓	✓
GFP HQ*	EX455-485, DM495, BA500-545	✓	
YFP	EX500/20, DM515, BA535/30	✓	
YFP HQ*	EX490-500, DM510, BA520-560	✓	

*Each filter/mirror has a very sharp rising edge at the corresponding wavelength, minimizing signal crossover.

Other Filter Cubes

Filter Cubes	Wavelengths	i series, Ti series	E series, TS100
Cy3	EX535/50, DM565, BA610/75	✓	
Cy5	EX620/60, DM660, BA700/75	✓	
Cy7	EX710/75, DM750, BA810/90	✓	

Multi-Band Filter Cubes

Filter Cubes	Abbreviations	Applications	i series, Ti series	E series, TS100
Dual	F-R	FITC, Rhodamine	✓	✓
	F-T	FITC, Texas Red	✓	✓
	D-F	DAPI, FITC	✓	✓
Triple	D-F-R	DAPI, FITC, Rhodamine	✓	✓
	D-F-T	DAPI, FITC, Texas Red	✓	✓

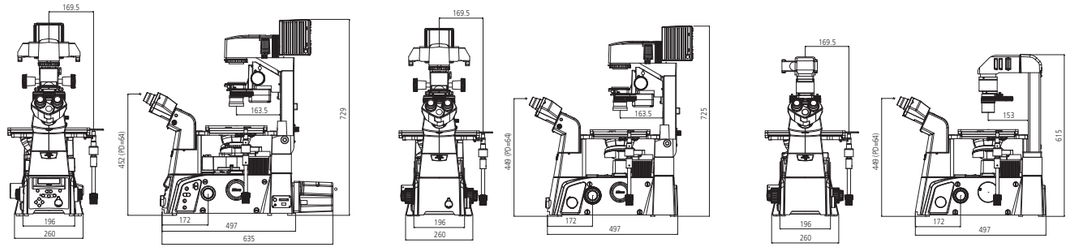
Filter Cubes for SMZ25/18

Filters	Wavelengths
GFP-B	EX460-500, DM505, BA510-560
GFP-L	EX460-500, DM505, BA510
RFP	EX530-560, DM570, BA590

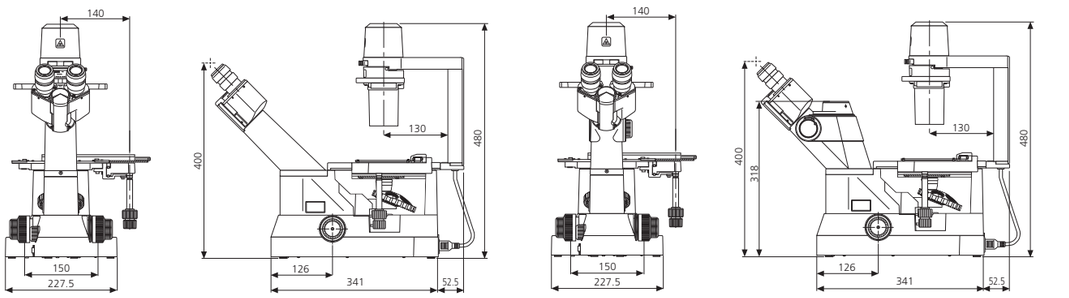
Note:
The lineup is constantly updated. For the latest information, please contact your local Nikon representative. The excitation filters or barrier filters in each filter cube are interchangeable. For custom setup, blank cubes without filters are also available. Please consult with your local Nikon distributor for a complete list of filters locally available or inquire about special custom filter combinations.

Dimensional Diagrams

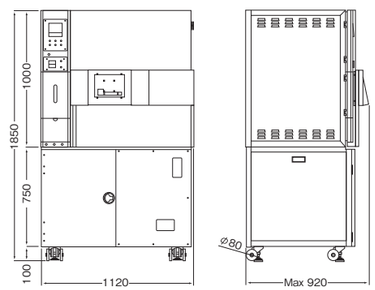
Ti-E / Ti-U / Ti-S



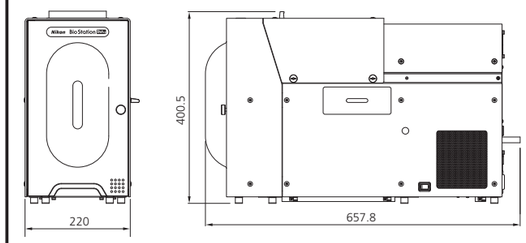
TS100 / TS100-F



BioStation CT

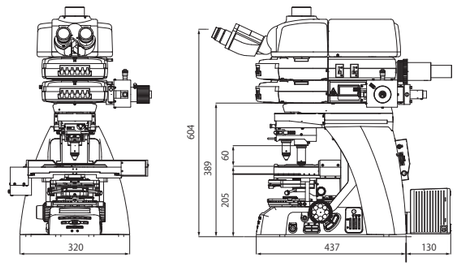


BioStation IM-Q



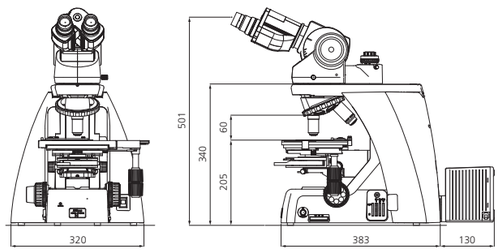
Ni-E (focusing nosepiece)

Configured with epi-fluorescence attachment, photoactivation unit and motorized quadrocular tilting tube



Ni-U

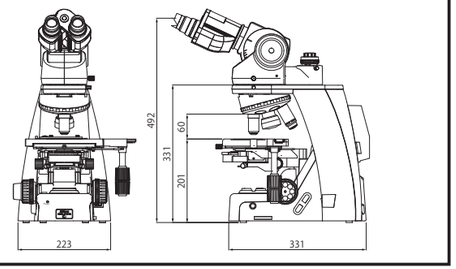
Configured with ergonomic binocular tube



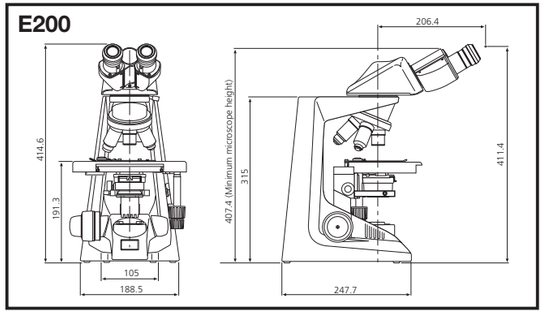
Eyepoint height: when pupillary distance is 64mm Unit: mm

Ci-E/L/S (Illustration is of Ci-E)

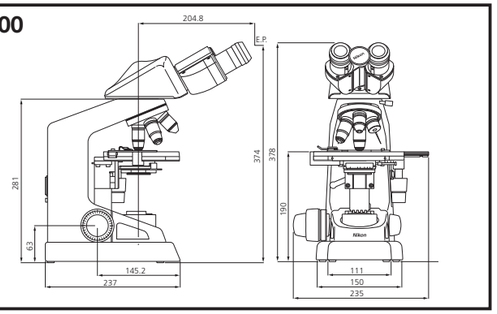
Configured with ergonomic binocular tube



E200

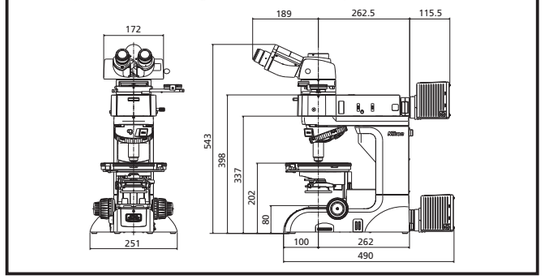


E100



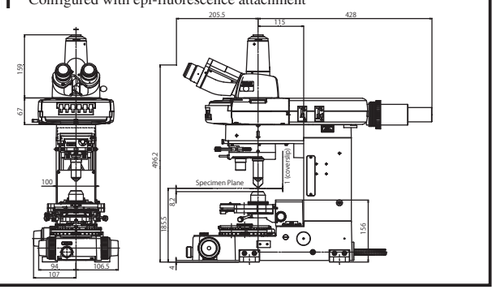
LV100N POL

Configured with Universal Epi-illuminator



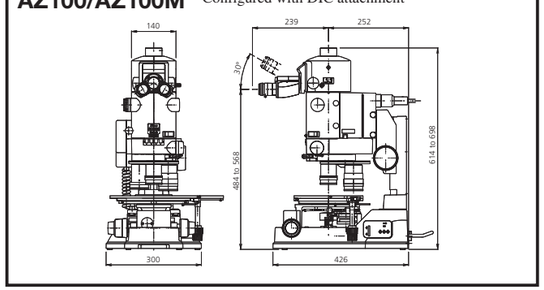
FN1

Configured with epi-fluorescence attachment



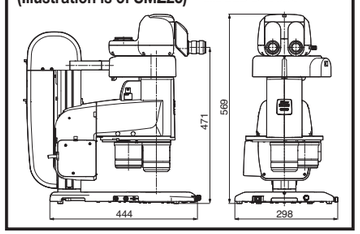
AZ100/AZ100M

Configured with DIC attachment



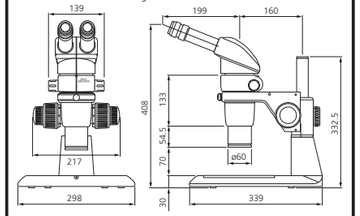
SMZ25/SMZ18 (Illustration is of SMZ25)

Configured with motorized epi-fluorescence attachment and LED DIA base



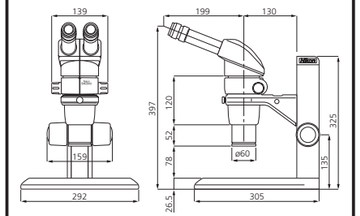
SMZ1000

Configured with C-PS160 plain stand, standard binocular tube, P-Plan Apo 1x objective



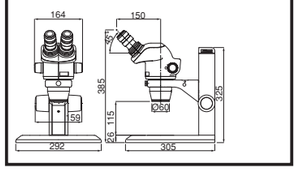
SMZ800

Configured with C-PS plain stand, standard binocular tube, P-Plan 1x objective



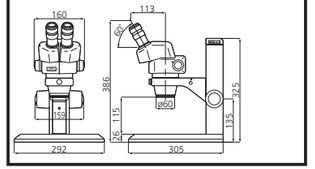
SMZ745T

Configured with C-PS plain stand



SMZ660

Configured with C-PS plain stand

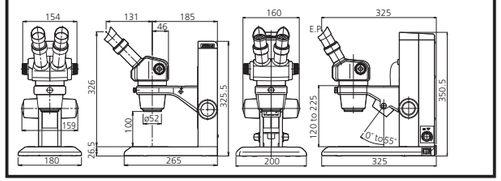


SMZ445

Configured with C-PSC plain stand

SMZ460

Configured with C-LEDS hybrid LED stand



Unit: mm