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Biological Microscope General Catalog

Biological Microscopes

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

Super Resolution Microscopes

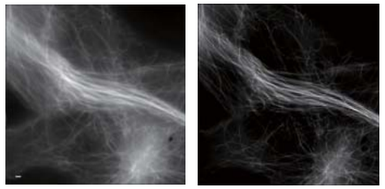
Super Resolution Microscope

N-SIM

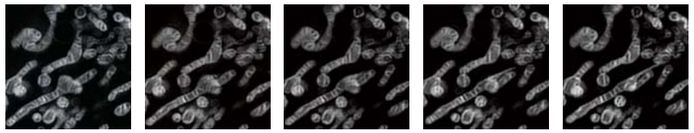
New

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
  - 3D-SIM mode allows axial super resolution imaging with optical sectioning at 300nm resolution in specimens of up to 20μm thick and eliminates out-of-focus background fluorescence, resulting in breathtaking contrast
- 5-laser multi-spectral super resolution imaging facilitates the study of dynamic interactions of multiple proteins at the molecular level



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



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

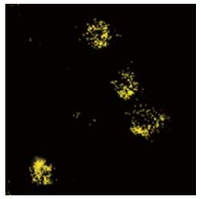
Super Resolution Microscope

N-STORM

New

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



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 four-port changeover, Ti-U with manual four-port changeover and Ti-S with manual two-port changeover
- High-speed multi-channel screening is possible by fast motorized control (Ti-E)
- Perfect Focus System (PFS) keeps in focus in real-time during long-term observation (Ti-E)
- 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 remote controller 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

Accessories for Ti Series

TIRF Photo Activation Illuminator Unit (for Ti-E/U)

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

Photo Activation Illuminator Unit (for Ti-E/U)

- Photo activation and photo conversion using proteins such as PA-GFP and Kaede are possible
- Realizes photo activation of an arbitrary determined spot
- Photo activation 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

Inverted Microscopes

ECLIPSE TS100/TS100-F

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

- Adopts CFI60 infinity optics for this class of microscope
- Apodized Phase Contrast objectives visualize minute details within a specimen
- Both models 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)

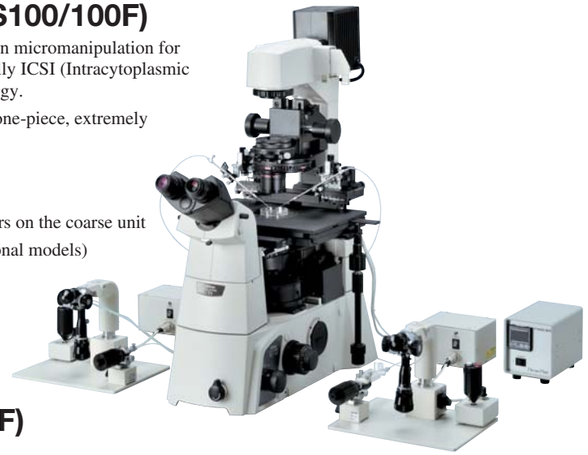
Oil Hydraulic Micromanipulation Systems

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

The NT-88-V3 series 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.

- Assembly of the micromanipulator is fast and easy due to the one-piece, extremely stable mounting adapter
- Easy-to-use hanging-type joystick
- Smooth operation without needle drift
- Needle top can be easily adjusted thanks to alignment indicators on the coarse unit
- Compact and stable design (less than half the size of conventional models)

(Manufactured by Narishige Co., Ltd.)



Water Hydraulic Micromanipulation System

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

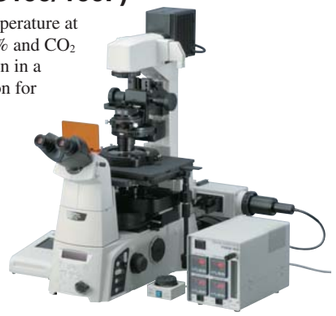
Needle drift caused by changes in room temperature has been decreased to the lowest possible level.
Optimized for long hours of micromanipulation, such as in electrophysiologic patch-clamp experiments.

(Manufactured by Narishige Co., Ltd.)

Stage Incubation System INU Series (for Ti-E/U/S, TS100/100F)

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.)



HG Precentered Fiber Illuminator "Intensilight" (for Ti-E/U/S, i-series upright microscopes, AZ100/100M multi-purpose zoom microscopes)

Long-life mercury light source, suitable for fluorescence observation

- Precentered lamp—easy lamp replacement, no alignment required
- Average lamp lifetime as long as 2,000 hours
- Fiber connection—less heat and electrical noise conducted to microscope body. Ideal for time lapse and other lengthy observations
- Constant, non-fluctuating light intensity through a direct current (DC) lighting
- Motorized model available—shutter and light intensity controllable from PC or remote controller

Thermal Plate Warmer

ThermoPlate MATS 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 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 90i

Efficient automation in observation and imaging

- Motorized operation model with control capability from buttons on the microscope body, ergo controller, DS-L2 camera controller or a PC
- High-precision motorized focusing
- Motorized switching between observation methods, for example, from epi-fluorescence to DIC
- Aperture and brightness are automatically adjusted following the change of the magnification
- In a combination with the DS series camera, auto focus in brightfield is possible. Microscope status data can be automatically recorded with images
- Revolutionary Fly-Eye optics offers an excellent even illumination for digital imaging
- Improved DIC prisms offer optimal contrast and resolution

Configured with the digital imaging head DIH-E, confocal scanner and DS series CCD camera

Advanced Research Microscope

ECLIPSE 80i

Revolutionary optics perfect for digital imaging

- Manual operation model, but with the motorizing capability to, for example, switch magnifications or excitation filters by using the DIH-E digital imaging head, motorized DIC nosepiece or motorized epi-fluorescence illuminator
- In a combination with the DS series CCD camera, microscope status data can be automatically recorded with images
- Revolutionary Fly-Eye optics offer an excellent even illumination for digital imaging
- Improved DIC prisms offer optimal contrast and resolution

Configured with epi-fluorescence illuminator and DS series CCD camera

Clinical & Laboratory Microscopes

ECLIPSE 55i/50i

The ultimate in comfort that takes clinical microscopy to new heights

- 55i incorporates LED illumination-featuring a constant color temperature and lower power consumption-which is paramount for brightfield
- 50i adopts a halogen light source with a built-in ND8 filter for various observation methods
- Ergonomic Tube matches varying eyepoints. A digital camera is also attachable with an optional DSC port
- Hard finish stage with smooth XY movement, featuring height adjustable stage handle
- A retrofittable compact Cytodiagnostic Unit enables quick switching between 10x and 40x using a hand switch. When attached to 55i, it also keeps a constant brightness
- Refocusing stage facilitates specimen exchange
- Dedicated Epi-Fluorescence illuminator incorporates a 4-position filter turret with a lock mechanism to one or two positions

50i configured with epi-fluorescence attachment

55i configured with Ergonomic Tube

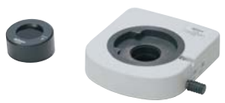
Accessories for i Series Upright Microscopes

Motorized Universal Epi-Fluorescence Attachment (for 80i)

Remote controller has CW/CCW switches for rotation of epi-fluorescence filter turret and epi-shutter IN/OUT switch

Simple Polarizing Accessories (for 90i, 80i, 50i)

For observing birefringent samples such as collagen, amyloids and crystals



Simple Polarizing set A

Simple Polarizing set B (with swing-out rotatable polarizer)

Sextuple Nosepiece with Analyzer Slot (with swing-out rotatable polarizer)

Drawing Tube (for 90i, 80i, 55i, 50i)

Microscope images can be easily traced while being observed

- Original optical system delivers images of 1x without a relay lens
- Low-magnification drawing kit available for drawing wider areas

Double Port (for 90i, 80i, 55i, 50i)

Mounted between a microscope body and trinocular tube, the double port enables the simultaneous mounting of two cameras.

Accessories for i Series Upright Microscopes

Sensitive Color Polarizing Accessories (for 90i, 80i, 50i)

For gout and pseudo-gout tests

Teaching Heads (for 90i, 80i, 50i)

The 50i can be configured with a two-person side-by-side or face-to-face version. The 90i/80i has versions that can handle up to 10 people. Structures can be selected flexibly, depending on use.

Two-person face-to-face version

Five-person version

Quadrocular Adapter (for 90i, 80i, 55i, 50i)

Two cameras can be simultaneously mounted on a trinocular eyepiece tube via this adapter and switched.

Magnification Module (for 90i, 80i, 55i, 50i)

The turret system allows the intermediate magnification to be changed from 1x to 1.25x, 1.5x or 2x.

Thermal Plate Warmer

ThermoPlate MATS Series (for 90i, 80i, 55i, 50i)

ThermoPlate MATS-U505S facilitates the thermal control of the specimen being observed. (rectangular type, W142 x D115mm) (Manufactured by Tokai Hit Co., Ltd.)

HG Precentered Fiber Illuminator "Intensilight" (for 90i, 80i, 55i, 50i, Ti-E/U/S inverted microscopes, AZ100/100M multi-purpose zoom microscopes)

See page 7 for details.

Upright Microscope

Clinical & Educational Microscope

ECLIPSE E200

CFI60

Outstanding cost performance—striking image sharpness, operability and durability

- 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
- Compliant with 100V-240V (multi-voltage)

Upright Microscope

Educational Microscope

ECLIPSE E100

High optical quality, simple operation and rigid design

- 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 (Halogen lamp model)

Polarizing Microscopes

ECLIPSE LV100POL/50iPOL/E200POL

CFI60

- CFI60 optics deliver world-class optical performance
- Excellent basic performance, operability, durability and, above all, outstanding image sharpness
- LV100POL 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 50iPOL is compact yet possesses high functionality, such as a nosepiece with DIN standard compensator slot (6V-30W model with centering quintuple nosepiece)
- E200POL is a cost-efficient and extremely compact model (6V-20W/30W multi-voltage model with quadruple nosepiece)

LV100POL

50iPOL

E200POL

Microscope for Asbestos Identification

Polarizing/Dispersion Microscope

ECLIPSE LV100-UDM-POL/DS

Dispersion staining microscopy that aids in the identification of asbestos

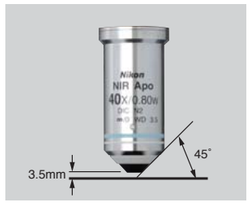
- Characteristic dispersion colors of each asbestos type corresponding to the refraction index of the immersion liquid can be observed using the phase contrast condenser and objective lens (40x) for dispersion staining microscopy
- Qualitative asbestos analysis is possible by determination of birefringence 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

- Multi Patch System motorizes viewfield changeover without having to move the specimen and objective
- 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



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

Stereoscopic Microscopes

■ Parallel-optics System

- Nikon's unique OCC illumination (Oblique Coherent Contrast) is available with a C-DSD diascopic stand, allowing colorless, transparent samples to be observed in high relief
- Various accessories, such as epi-fluorescence attachment, teaching head, simple polarizing set, are available
- Eyepiece tube is exchangeable from 20º inclination, low eyelevel, tilting eyepiece tube

Stereoscopic Zoom Microscopes

SMZ1500

Top-of-the-line stereoscopic zoom microscope boasting a 15x zoom ratio, and high NA and resolution.

Configured with C-DSD diascopic stand

SMZ1000

A 10x zoom ratio stereoscopic microscope offering superb optical performance and ergonomic operability.

Configured with C-PS160 plain stand

SMZ800

An affordable stereoscopic zoom microscope with a 6.3x zoom ratio offering excellent optical performance and expandability.

Configured with C-PS plain stand

■ Twin Objective System

Stereoscopic Zoom Microscopes

SMZ745/745T

New

SMZ745 configured with C-PS plain stand

SMZ745T configured with C-PS plain stand

SMZ660

SMZ660 configured with C-PS plain stand

SMZ445/460

SMZ445 configured with hybrid LED stand

SMZ460 configured with hybrid LED stand

- SMZ745T is a trinocular tube model ideal for monitoring and photomicrography
- SMZ745/745T and SMZ445 have 45° eyepiece inclination for comfortable viewing. SMZ660 and SMZ460 with 60° inclination are suitable for system integration
- Zoom ratio is 7.5x for SMZ745/745T, 6.3x for SMZ660, 4.4x for SMZ445 and 4.3x for SMZ460
- The new hybrid type long-life LED stand features built-in diascopic and angle-adjustable episcopic illumination. Both illuminations can be used simultaneously

Stereoscopic Microscope

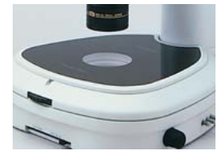
SM-5

Compact yet sturdy, its flexible design permits easy attachment to various instruments in production and quality control facilities at minimum costs.

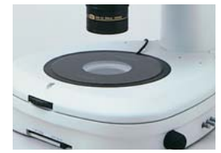
Thermal Plate Specimen Warmer

ThermoPlate MATS Series (Manufactured by Tokai Hit Co., Ltd.)

- MATS-USMZSL—for C-DSS/DSD/BD diascopic stands
- MATS-USMZSS—for C-DS diascopic stand
- MATS-USMZR—ring type φ180mm
- MATS-U4020WF—wide working-area type W430 x D205 x H75-100mm



MATS-USMZSL



MATS-USMZR

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

A1R MP

High-speed imaging of deep area in a living specimen

- Resonant scanner enables imaging up to 420 fps (512 x 32 pixels)
- Deep imaging with high-sensitivity NDD (non-descanned detector)
- 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

New

Configured with Ti-E

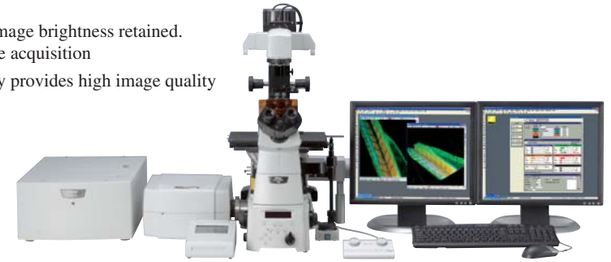
Confocal Microscope Systems

Confocal Microscope

A1R/A1

The A1R with a revolutionary hybrid scanner realizes ultrafast and high-resolution imaging

- Hybrid scanner capable of high-speed imaging at 420 fps (512 x 32 pixels) allows simultaneous imaging and photo activation (A1R)
- High-resolution imaging up to 4096 x 4096 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

A1Rsi/A1si

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
- 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

New

C2si configured with 90i

CCD Cameras

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-Fi1

- 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

New

Configured with ECLIPSE 80i

- 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-L2

Configured with ECLIPSE TS100F

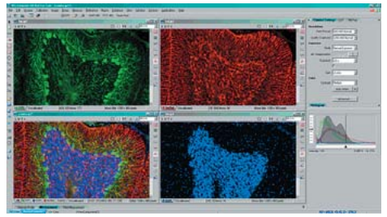
- Built-in high-definition 8.4-in. large LCD monitor
- Camera can be operated via the GUI of the LCD monitor, eliminating the necessity of PC connection
- Various digital interfaces including USB 2.0 connection
- Pre-programmed imaging modes for different observation methods
- Allows control of the Nikon motorized microscopes 90i/80i

Software

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.

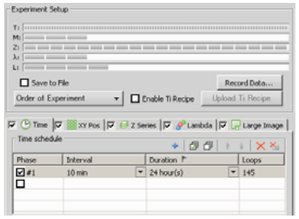
D *NIS-Elements Documentation*

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

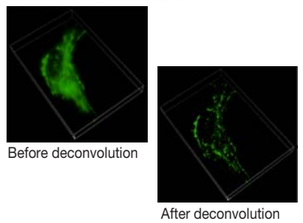
Up to 6D image acquisition combining dimensions such as X, Y, Z, time, wavelength and multipoint is easily set using the intuitive GUI.



3D/2D Real-time 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 2DRT)

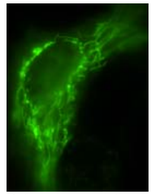
3D blind deconvolution



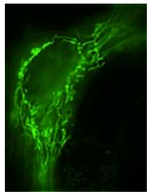
Before deconvolution

After deconvolution

2D real-time deconvolution



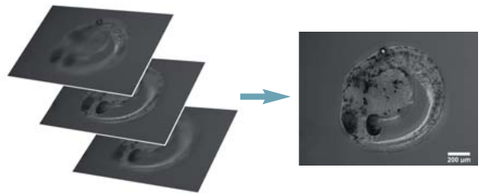
Before deconvolution



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 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.

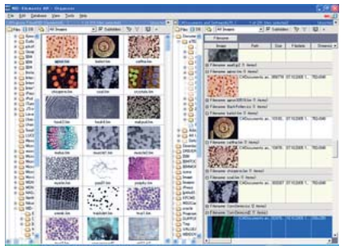


All-in-focus image created from a sequence of Z-stack images

Visit www.nis-elements.com for more detailed information

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	—			◎	△			△	○		
		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		✓	◎	●			△	○		
		100xH	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 100xH	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 100xH	Oil	1.25	0.23	0.17		✓	○			◎ PH3	△	△		
		BM 10x		0.25	7.00	—			○			◎ 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		✓	◎	○●			△	○		
		50xH	Oil	0.90	NCG0.35	—		✓	◎	●			△	○		
		100xH	Oil	1.25	0.20	0.17		✓	◎				△	○		
	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 100xH	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	
		40xH	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)

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

H: oil immersion type
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	
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		✓	◎	○●	○		○	◎	◎	●
		40xH	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		0.90	0.32-0.28	0.14-0.20	✓	✓	◎	●	○		○	◎	◎	
		100xH	Oil	1.30	0.20	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 100xH	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○	●
	Apodized phase contrast (CFI Plan Fluor)	ADH 100xH	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○	●
Plan Apochromat	Brightfield (CFI Plan Apo)	2x		0.10	8.50	—			◎				○	◎	△	
		4x		0.20	20.00	—			◎				○	◎	△	●
		10x		0.45	4.00	0.17			◎	△	○		○	◎	△	●
		20x		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△	●
		VC 20x		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△	●
		40x		0.95	0.16-0.12	0.11-0.23	✓	✓	◎	●	○		○	◎	△	●
		60x		0.95	0.17-0.13	0.11-0.23	✓	✓	◎	●	○		○	◎	△	
		VC 60xH	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	○	◎	△	
		VC 100xH	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-100x	○	◎	△	●
		NCG 100xH	Oil	1.40	0.16	0		✓	◎		○		○	◎	△	
	Phase contrast (CFI Plan Apo)	DM 20x		0.75	1.00	0.17		✓	○	○●		◎ PH2		○	△	
		DM 40x		0.95	0.16-0.12	0.11-0.23	✓	✓	○	●		◎ PH2		○	△	●
		DM 40xH	Oil	1.00	0.16	0.17		✓w/stopper	○	●		◎ PH3		○	△	
		DM 60x		0.95	0.17-0.13	0.11-0.23	✓	✓	○	●		◎ PH2		○	△	
		DM 60xH	Oil	1.40	0.13	0.17		✓	○			◎ PH3		○	△	●
		DM 100xH	Oil	1.40	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	○	◎	○	●
		60xH λS	Oil	1.40	0.14	0.17		✓	◎		○	EXT PH3-60x	○	◎	◎	●
	Evanescent (CFI Apo)	TIRF 60xH	Oil	1.49	0.12	0.13-0.19 (23℃) 0.15-0.21(37℃)	✓		◎		○	EXT PH4-60x	○	◎	△	●
		TIRF 100xH	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. Ti-E PFS
● : compatible with PFS (Perfect Focus System) of the Ti-E

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 Slider	Condenser Module	DIC Slider	Condenser Module	DIC Slider
10x	Plan Fluor 10x Plan Apo 10x S Fluor 10x	LWD N1 Dry	10x	—				—				—			
20x	Plan Fluor 20x Plan Apo 20x S Fluor 20x Plan Fluor 20xA MI 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 Plan Apo 40x S Fluor 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 60x Plan Apo VC 60x Oil Apo TIRF 60x Oil	LWD N2 Dry	60x I	—		LWD NR Dry	60x I	HNA N2 Dry	60x I	HNA NR Dry	60x I	HNA N2 Oil	60x I	HNA NR Oil	60x I
	Plan Fluor 60x Oil Plan Fluor 60x 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 VC 100x Oil Apo TIRF 100x Oil Plan Fluor 100x	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

For 90i/80i 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 Apo 10x (Eco) Plan Fluor 10x S Fluor 10x	N1 Dry	10x	—				—			
20x	Plan Fluor 20x Plan Fluor 20xA MI Plan Apo 20x S Fluor 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 Plan Apo 40x S Fluor 40x	N2 Dry	40x I	N1 Dry	40x I-C			N2 Oil	40x I		
	Plan Fluor 40x Oil S Fluor 40x Oil		40x II						40x II		
	S Plan Fluor ELWD 40xC	N1 Dry	40x IV					—		—	
60x	Plan Apo 60x Plan Apo VC 60x Oil 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 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 VC 100x Oil Plan Apo 100x NCG Oil Apo TIRF 100x Oil Plan Fluor 100x	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 FN1 microscope for patch clamp experiments

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

Epi-fluorescence Filters

Filter Characteristics

	Filters	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	✓	✓

Filters for Fluorescent Protein

Filters	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 Filters

Filters	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 Filters

Filters	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	✓	✓

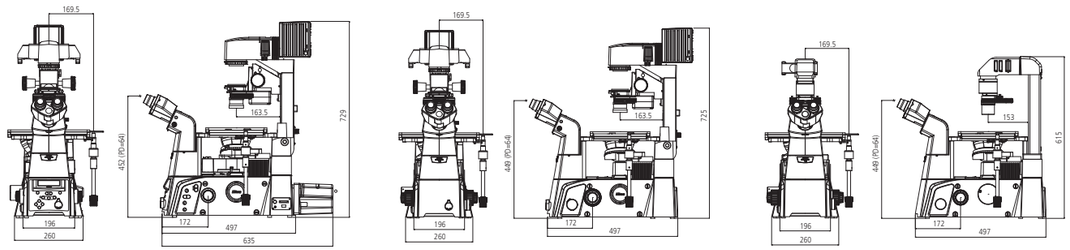
Filters for SMZ1500/1000/800

Filters	Wavelengths
GFP-L	EX460-500, DM505, BA510
GFP-B	EX460-500, DM505, BA510-560

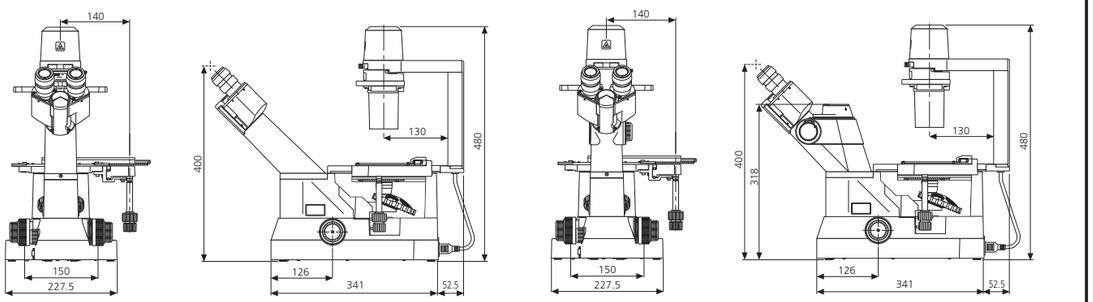
Note:
The lineup is constantly updated. For the latest information, please contact your local Nikon representative. The excitation filters or barrier filters in each filter cube are interchangeable. For custom setup, blank cubes without filters are also available. Please consult with your local Nikon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

Dimensional Diagrams

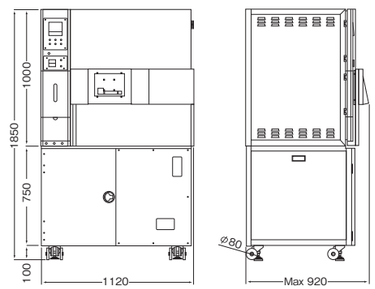
Ti-E / Ti-U / Ti-S



TS100 / TS100-F



BioStation CT



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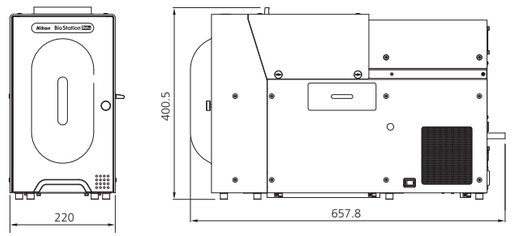
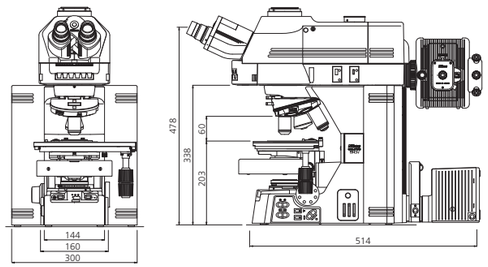
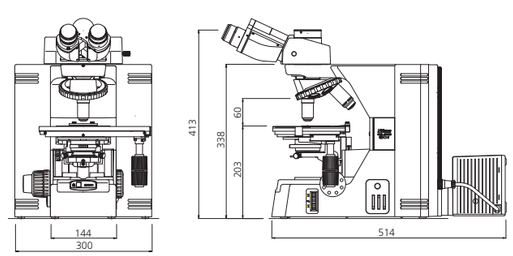


90i

Configured with digital imaging head

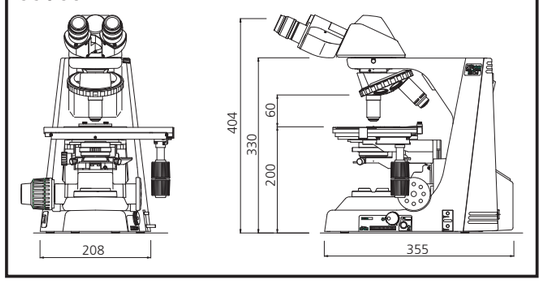


80i

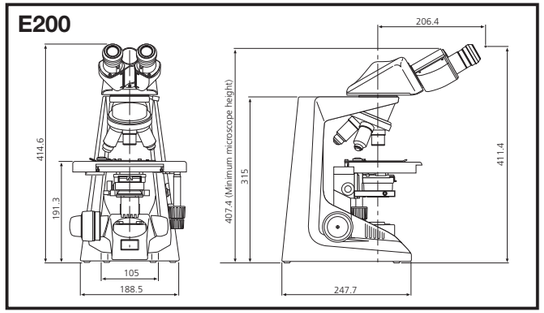


Eyepoint height: when PD is 64mm Unit: mm

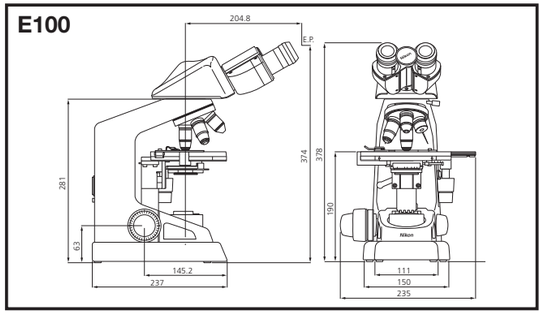
55i/50i



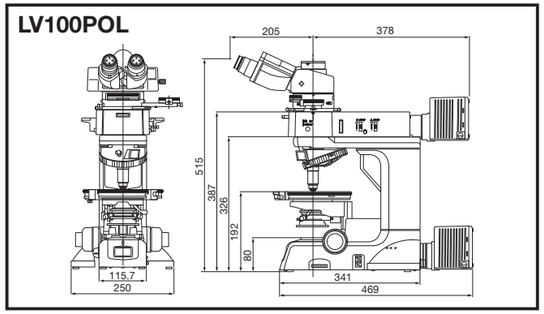
E200



E100

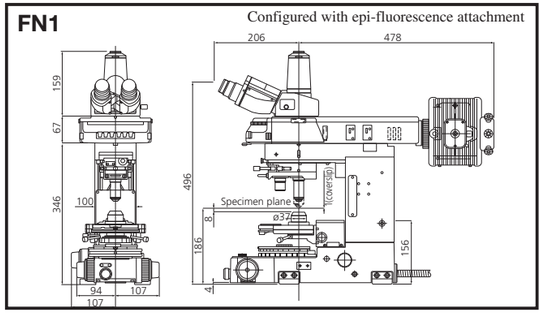


LV100POL



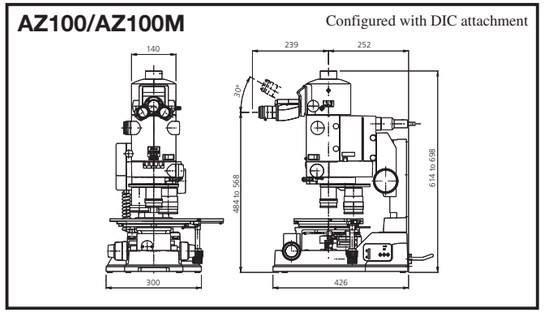
FN1

Configured with epi-fluorescence attachment

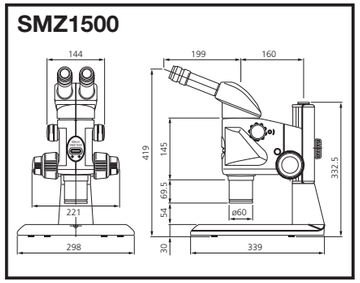


AZ100/AZ100M

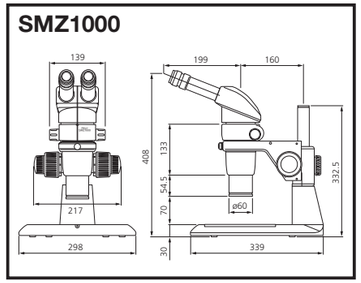
Configured with DIC attachment



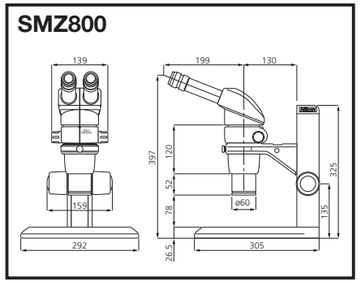
SMZ1500



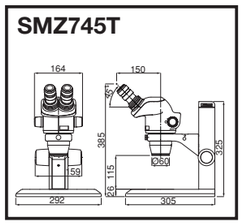
SMZ1000



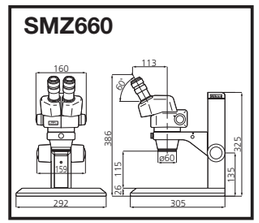
SMZ800



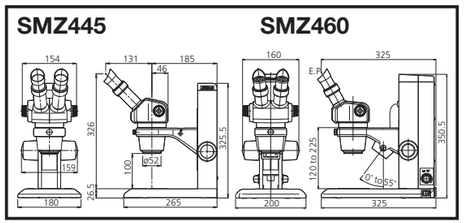
SMZ745T



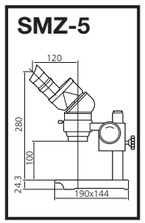
SMZ660



SMZ445 / SMZ460



SMZ-5



Unit: mm