Nikon

Biological Microscopes

Nikon 100th anniversary

Contents

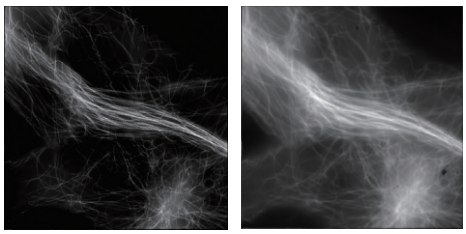
*1 NAMC (Nikon Advanced Modulation Contrast) is Nikon's unique modulation contrast observation method, which provides stereoscopic images similar to DIC observation, even with samples on plastic dishes.
*2 Emboss contrast is Nikon's unique contrast observation method. It provides pseudo-three-dimensional images using focal illumination, which gives high contrast to samples. *3 Brighter than 100W

Super Resolution Microscope

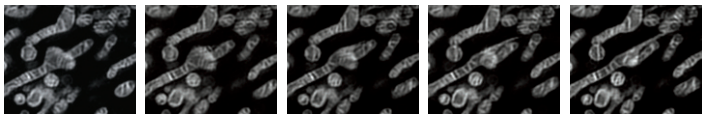
N-SIM

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. 115nm*) 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 3D-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 reconstruction methods are available with 3D-SIM mode: Slice 3D-SIM allows axial super-resolution imaging with optical sectioning at 300nm resolution in specimens; Stack 3D-SIM can image thicker specimens than Slice 3D-SIM
- The optional two-camera imaging adapter allows simultaneous two-wavelength super-resolution imaging with excitation of 488nm and 561nm
- 5-laser multi-spectral super resolution imaging facilitates the study of dynamic interactions of multiple proteins at the molecular level
- The personal super-resolution microscope N-SIM E, which provides a streamlined, affordable super-resolution system supporting only essential, commonly used excitation wavelengths and imaging modes, is also available



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



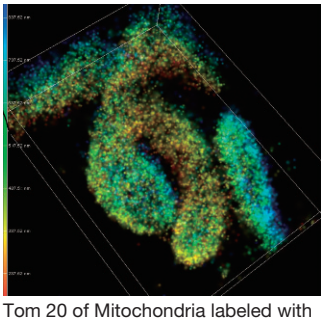
Dynamics of mitochondria (approx. 1 sec. image capturing intervals)

Super Resolution Microscope

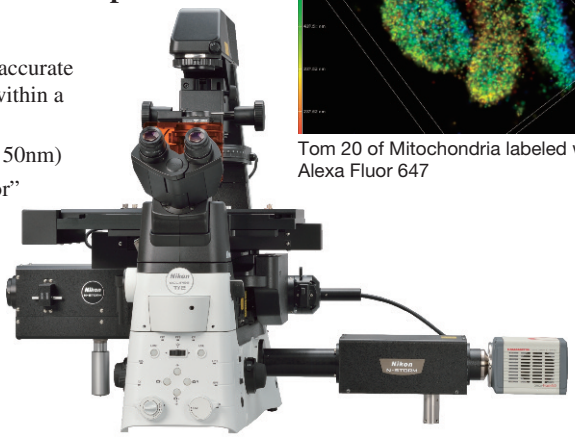
N-STORM

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

- Ultra-high spatial resolution (up to 20nm in xy) is achieved by utilizing accurate localization information of thousands of discrete fluorophor molecules within a specimen
- A tenfold enhancement has also been achieved in axial resolution (up to 50nm)
- Multicolor super-resolution imaging utilizing a combination of "activator" and "reporter" probes affords a critical insight into the co-localization and interaction of proteins at the molecular level
- N-STORM 4.0, a fully improved version of N-STORM, provides faster image acquisition, clearer images with high molecule counts, and a wider imaging area than before



Tom 20 of Mitochondria labeled with Alexa Fluor 647



Inverted Research Microscopes

ECLIPSE Ti2-E/Ti2-A/Ti2-U

Leading platform for advanced imaging

- Bright and uniform illumination is provided across an unprecedented 25mm field of view that maximizes the sensor area of large-format CMOS cameras, and significantly improves data throughput
- Ti2-E is a motorized and intelligent model for advanced imaging applications, and Ti2-A and Ti2-U are manual models with imaging capability for laser applications. Ti2-A has unique, intelligent features
- Ti2-E is compatible with real-time focus maintenance Perfect Focus System (PFS), auto correction collar, and external phase contrast system
- For its stable and drift-free platform, Ti2-E is perfect for super-resolution and confocal imaging
- The hardware-triggering capabilities of Ti2-E enhance even the most challenging, high-speed imaging applications
- Stability of PFS on Ti2-E is enhanced by reducing mechanical load on the nosepiece. It is compatible with broad wavelengths from ultraviolet to infrared, as well as various applications involving plastic dishes, single molecule and multi-photon imaging
- Ti2-E/Ti2-A's intelligent functions provide interactive guidance for microscope operation by integrating data from internal sensors, thus eliminating the possibility of user errors. The status of each sensor is automatically recorded during image acquisition

Ti2-E

Ti2-A

Ti2-U

Illumination modules

Ti2-LAPP Modular Illumination System (for Ti2-E/A/U)

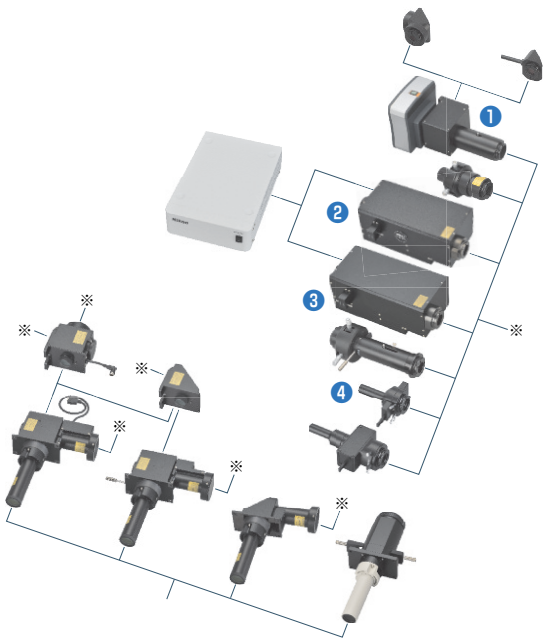
A wide range of illumination modules can be flexibly combined or added to create an imaging system tailored for individual research. Utilizing the Ti2's stratum structure, up to five modules can be simultaneously mounted and rapidly switched. Dual layer configuration of filter cube turrets enables optimal filter configuration for illumination modules on each layer.

❶ DMD Module: Allows for simultaneous multi-point photoactivation with customizable illumination ROIs

❷ N-STORM Module2: Equipped with motorized switching of illumination field for N-STORM microscopy

❸ H-TIRF Module: Enables automatic laser focus adjustment and incident angle adjustment for TIRF observations

❹ EPI FL Module for Large FOV: Delivers a large 25mm field of view and is perfect for epi-fluorescence imaging with cameras with large sensors



Inverted Research Microscopes

ECLIPSE Ts2R/Ts2R-FL

A compact inverted research microscope configurable with a wide variety of observation methods

- Space-saving compact body allows these models to be easily fit inside a laminar flow hood
- Low stage design helps reduce fatigue during repetitive sample exchange
- Mechanical stage with long travel stroke enables observation of entire 96-well plates
- High-intensity LED light source is used for both diascopic and epi-fluorescence illumination
- In addition to DIC and NAMC, the Emboss Contrast method is possible, enabling observation of thick samples with high contrast and relief images using standard condenser lenses and objectives, supporting both plastic and glass dishes
- The Ts2R-FL features built-in fluorescence light source and filter turret, accommodating up to four sets of LED units and filter cubes
- Illumination can be switched to epi-fluorescence with one button; the fluorescence illumination brightness adjuster is located on the same side of the microscope for intuitive operation (Ts2R-FL)
- Optional Contrast Shield blocks room light, making high S/N fluorescence observation possible even in brightly-lit rooms (Ts2R-FL)
- The spindle observation system allows accurate locating of spindle bodies, which is important for IVF, and also makes switching to NAMC and emboss contrast observation easy

ECLIPSE Ts2R
(Diascopic illumination model)

ECLIPSE Ts2R-FL
(Diascopic and epi-fluorescence illumination model)

Inverted Routine Microscopes

ECLIPSE Ts2/Ts2-FL

Fits in every laboratory — Simple to use and compact

- Space-saving compact bodies allow these models to be easily located next to incubators; camera port located on the side enables confirmation of what is on the stage from the observation position
- Mechanical stage with long travel stroke enables observation of entire 96-well plates
- High-intensity LED light source is used for both diascopic and epi-fluorescence illumination
- The Emboss Contrast method allows observation of thick samples with high contrast and relief images using standard condenser lenses and objectives, supporting both plastic and glass dishes
- The Ts2-FL features built-in fluorescence light source and filter turret, accommodating up to three sets of LED units and filter cubes
- Illumination can be switched to epi-fluorescence with one button; the fluorescence illumination brightness adjuster is located on the same side of the microscope for intuitive operation (Ts2-FL)
- Optional Contrast Shield blocks room light, making high S/N fluorescence observation possible even in brightly-lit rooms (Ts2-FL)

ECLIPSE Ts2
(Diascopic illumination model)

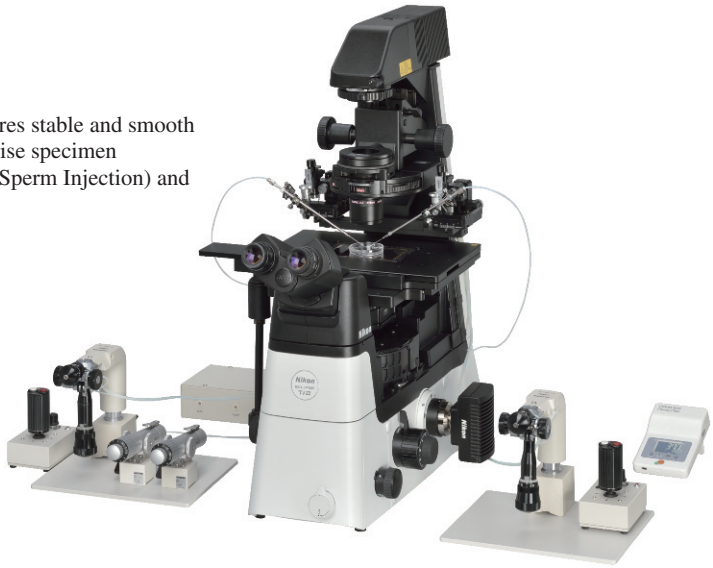
ECLIPSE Ts2-FL
(Diascopic and epi-fluorescence illumination model)

Accessories for Inverted Microscope

Micromanipulator System

NT-88-V3 (for Ti2-E/A/U, Ts2R/Ts2R-FL)

The NT-88-V3 with compact and easy-to-assemble design ensures stable and smooth operation without needle drift. It provides microscopic and precise specimen micromanipulation in the fields such as ICSI (Intracytoplasmic Sperm Injection) and transgenic biotechnology.
(Manufactured by Narishige Co., Ltd.)



Epi-FI LED Illuminator
(for Ti2-E/A/U, 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 Ti2-E/A/U, Ts2R-FL, 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 Top Incubator

STX series (for Ti2-E/A/U, Ts2R/Ts2R-FL)

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 over 1 week.

(Manufactured by Tokai Hit Co., Ltd.)

Thermal Plate Warmer

ThermoPlate TPi Series
(for Ti2-E/A/U, Ts2/Ts2-FL, Ts2R/Ts2R-FL)

Automatic thermocontrol system with a glass heating plate keeps the specimen at a set temperature. Temperature is adjustable from room temperature to 60ºC 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 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

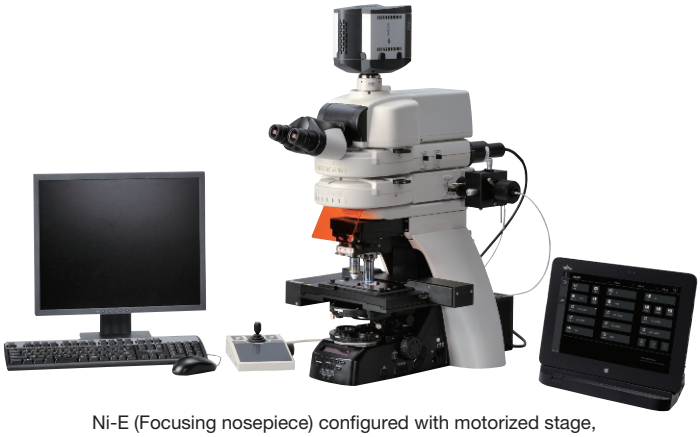
Motorized Advanced Research Microscope

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)
- The E200-dedicated epi-fluorescence attachment is equipped with an LED light source with a minimum lifespan of 10,000 hours.

E200 (model without field diaphragm)

Upright Microscope

Educational Microscope

ECLIPSE E100

High optical quality, simple operation and rigid design

- High-luminescence LED (Eco-illumination) and halogen lamp models are both 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
- Adjustable condenser position (Simplified Kohler's Illumination System)
- 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-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

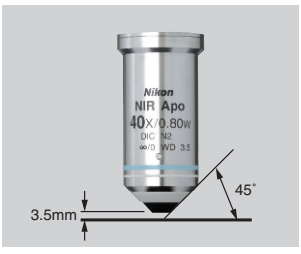
- Characteristic dispersion colors of each asbestos type corresponding to the refraction index of the immersion liquid can be observed using the phase contrast condenser and objectives (10X and 40X) for dispersion staining microscopy
- Qualitative asbestos analysis is possible by determination of birefringence 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 stereo 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 various accessories including trinocular tubes

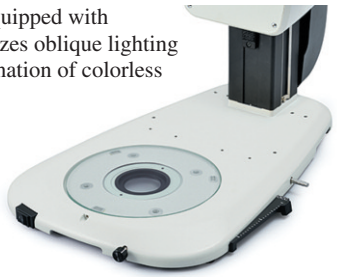
SMZ25 configured with motorized epi-fluorescence attachment and LED diascopec illumination base

SMZ18 configured with LED diascopic illumination stand

Accessories for SMZ25/SMZ18

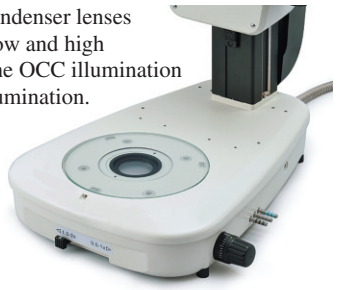
LED Diascopic Illumination Base

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.

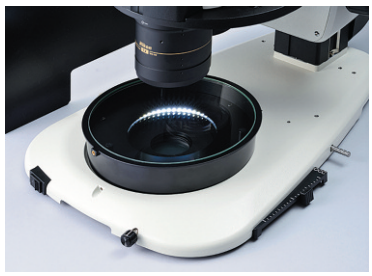


LED Ring Illumination Unit

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

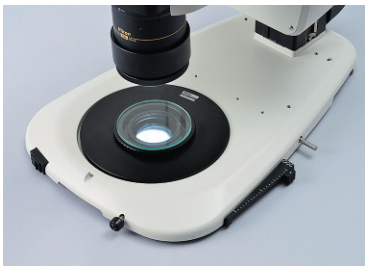
LED Dark Field Unit

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.



Epi Fluorescence Attachment

A fly eye lens ensures bright high-contrast images over the entire field of view.
A motorized model with control via a remote control unit or imaging software is also available.

SMZ1270/1270i, SMZ800N

- SMZ1270/1270i provides highest-in-class zoom ratio of 12.7:1. Zoom ratio of SMZ800N is 8:1
- Total magnification 3.15-480X (SMZ1270/1270i), 5-480X (SMZ800N), depending on eyepieces and objectives used
- High-level chromatic aberration correction provides sharp images
- Automatic detection of zoom magnification in combination with the digital camera control unit. Objective information is also detected with the intelligent nosepiece. (SMZ1270i)
- Compatible with various accessories, including trinocular tubes, epi-fluorescence attachment and teaching head. The slim-type LED diascopic stand is equipped with OCC illumination. The nosepiece offers both a widened magnification range and on-axis imaging

SMZ1270 configured with binocular tube and LED diascopic illumination stand

SMZ1270i configured with trinocular tilting tube, intelligent nosepiece and LED diascopic illumination stand

SMZ800N configured with binocular tube and 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

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

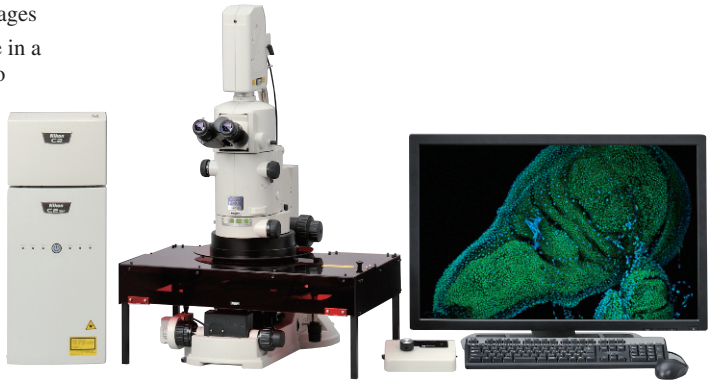
Multizoom AZ100/AZ100M/AZ-C2+

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+

Laser Units

LU-NV laser units
(for Ti2-E/A/U, Ni-E/U, FN1, AZ100)

Up to 8 wavelengths and 7 fiber outputs are available to choose from. Switching fiber output allows a single laser unit to simultaneously support multiple laser applications, such as TIRF and photoactivation modules, Confocal Microscope A1+ and C2+, and Super Resolution Microscope N-SIM and N-STORM.

LU-NV laser unit with LU controller box B (top)

LU-N4/N4S 4-laser unit, LU-N3 3-laser unit
(for Ti2-E/A/U, Ni-E/U, FN1, AZ100)

A compact and easy-to-use laser unit that can support laser application systems such as TIRF and photoactivation modules, Confocal Microscope A1+ and C2+. LU-N4/LU-N4S* is equipped with four lasers (405nm, 488nm, 561nm, and 640nm), while LU-N3 has three lasers (405nm, 488nm, and 561nm).

*LU-N4S is compatible with spectral imaging but not with the Ti2-LAPP system.

LU-N4/N4S/N3 laser unit

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 high-resolution imaging and ultrafast imaging of up to 420 fps (512 x 32 pixels).
- A1R MP+ includes a model that is compatible with simultaneous excitation imaging using a dual-wavelength IR laser
- Deep imaging with ultrasensitive GaAsP (gallium arsenide phosphide) NDD
- 1300nm wavelength-compatible episcopic GaAsP NDDs are available for Ni-E/FN1, enabling deep imaging up to 1.4mm
- Multiphoton laser beam can be automatically aligned with a single click
- Acquisition of 32 channels (512 x 32 pixels) at 24 fps in a single scan is possible when configured with a spectral detector unit, enabling accurate, real-time spectral imaging

Configured with Ni-E

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) as well as simultaneous photoactivation and imaging
- The high-sensitivity GaAsP multi-detector unit enables much brighter imaging with minimal noise than conventional detectors
- Dichroic mirror with 30% increased fluorescence efficiency provides high image quality
- Acquisition of 32 channels (512 x 32 pixels) at 24 fps in a single scan is possible when configured with a spectral detector unit, enabling accurate, real-time spectral imaging
- The A1-DUVB GaAsP detector unit allows spectral imaging with user-defined emission bandwidths

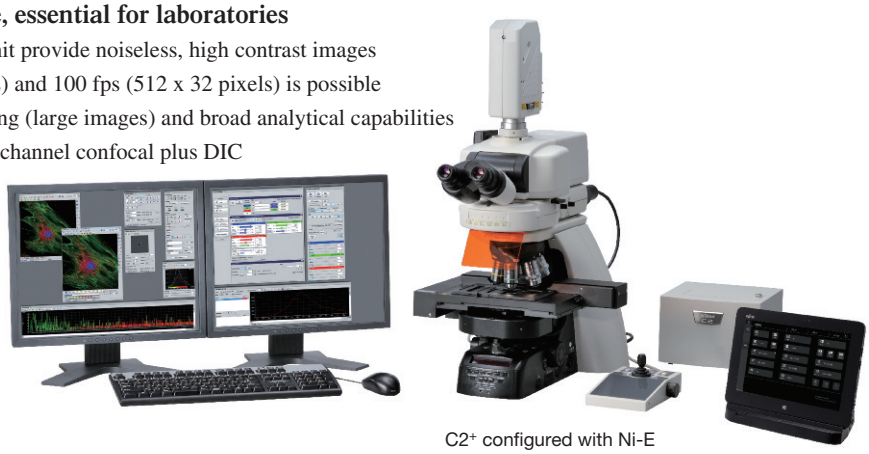
Configured with Ti2-E

Confocal Microscope

C2+/C2si+

Powerful personal confocal microscope, essential for laboratories

- Highly efficient scanning head and detector unit 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
- The C2-DUVB GaAsP detector unit allows spectral imaging with user-defined emission bandwidths



C2+ configured with Ni-E

Digital Cameras for Microscopes

Digital Sight Series

Cameras for capturing high quality microscopy images, including a high-resolution DS-Ri2 camera equipped with a large FX-format sensor, a DS-Qi2 monochrome camera with superior quantitative analysis capabilities, and a compact DS-Fi3 C-mount camera, are available.

F-mount CMOS cameras

Microscope Camera DS-Ri2

- Equipped with a 16.25-megapixel CMOS sensor for digital SLR cameras that has been optimized for microscopes
- Fast acquisition of high-resolution images up to 4908 x 3264 pixels
- Accurate color reproduction of microscopy images with Nikon's proprietary image processing engine
- High frame rate of up to 45 fps (1636 x 1088 pixels) enables fast focusing
- High-sensitivity low-noise color fluorescent imaging is possible

Monochrome Microscope Camera DS-Qi2

- Equipped with a large format 16.25-megapixel monochrome CMOS sensor
- High-sensitivity imaging of weak fluorescent signals
- Cooling mechanism allows low noise imaging with high S/N ratio
- Reliable quantitative analysis with excellent linearity
- High frame rate of up to 45 fps (1636 x 1088 pixels) enables fast focusing
- Time-lapse imaging with high temporal resolution

C-mount CMOS camera

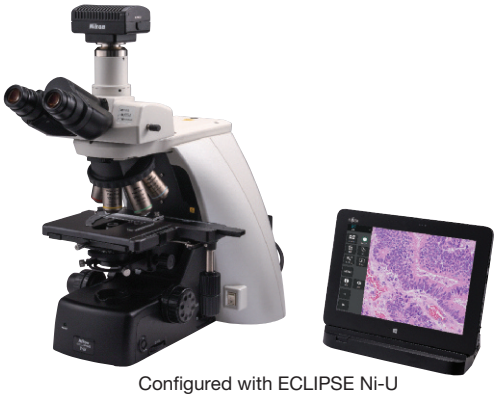
Microscope Camera DS-Fi3

- Equipped with a high density 5.9 megapixel CMOS sensor
- Fast acquisition of high-resolution images up to 2880 x 2048 pixels
- High frame rate of up to 30 fps (1440 x 1024 pixels) enables fast focusing easy capturing of images in all types of observation methods
- Improved quantum efficiency and read noise provide fluorescence images with higher S/N ratios
- Accurate color reproduction of microscopic images with Nikon's proprietary image processing engine
- Can be directly connected to a PC via a fast USB3.0 interface

Camera control unit

Camera control unit DS-L4

- The DS-Fi3 can be set and operated by touch, or by connecting Bluetooth accessories such as a keyboard or mouse.
- Large, 10.1 inch, 1920 x 1200 pixel touch-screen display
- Various digital interfaces, including a USB 3.0 connection
- Pre-programmed imaging modes for different observation methods
- Allows control of motorized devices on ECLIPSE Ni-E/U and Ci-E

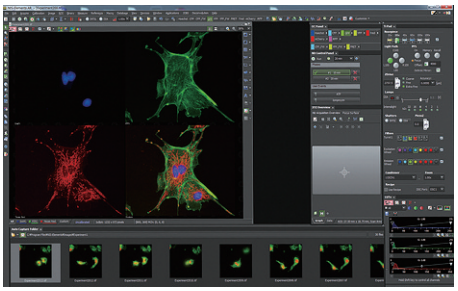


Configured with ECLIPSE Ni-U

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).



Nikon offers a number of microscope software packages to control and optimize the performance of its products.

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.

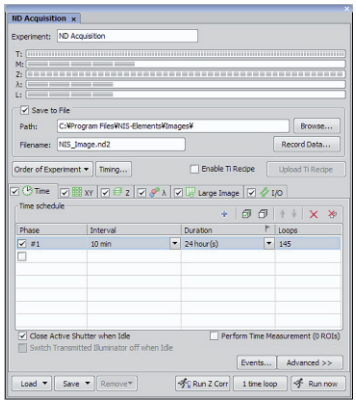
D NIS-Elements Documentation

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.

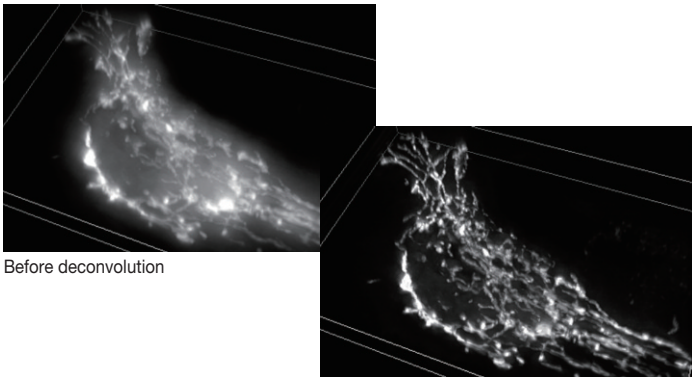
Multidimensional Capturing

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)

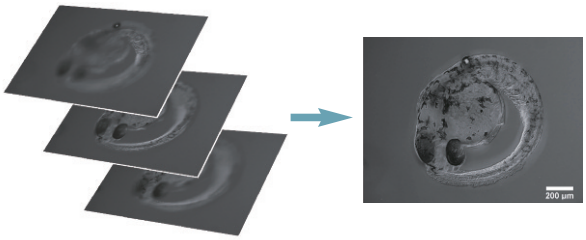


Before deconvolution

After deconvolution

Extended Depth of Focus

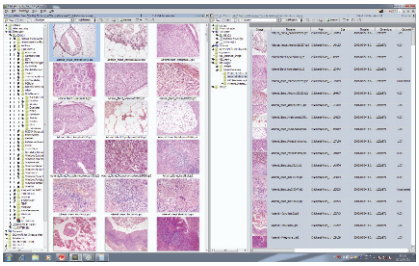
With the Extended Depth of Focus (EDF) plug-in, images that have been captured in a different Z-axis using a motorized stage can be used to create an all-in-focus image. Also, it is possible to create stereovision images & 3D surface images to achieve virtual 3D imaging.



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.



Objectives

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Ti2-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	2.70-1.70	0-2.00	✓		◎	○●			△	○		
		60X		0.80	0.30	0.17		✓	◎	●			△	○		
		100X Oil	Oil	1.25	0.23	0.17		✓	◎				△	○		
		100XS Oil	Oil	0.50-1.25	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	1.20			○			◎ PH1	△	△		
		DL 40X		0.65	0.65	0.17		✓	○	○●		◎ PH2	△	△		
		LWD DL 40XC		0.55	2.70-1.70	0-2.00	✓		○	○●		◎ PH2	△	△		
		DL 100X Oil	Oil	1.25	0.23	0.17		✓	○			◎ PH3	△	△		
		BM 10X		0.25	7.00	0.70			○			◎ PH1	△	△		
	Apodized phase contrast (CFI)	ADL 10XF		0.25	6.20	1.20			○			◎ PH1	△	△		
		LWD ADL 20XF		0.40	3.10	1.20			○			◎ PH1	△	△		
		LWD ADL 40XF		0.55	2.10	1.20			○			◎ PH1	△	△		
		LWD ADL 40XC		0.55	2.70-1.70	0-2.00	✓		○	○●		◎ PH2	△	△		
	Advanced modulation contrast (CFI)	NAMC 10XF		0.25	6.20	1.20			○					△		
		LWD NAMC 20XF		0.40	3.10	1.20			○					△		
		LWD NAMC 40XC		0.55	2.70-1.70	0-2.00	✓		○					△		
Plan Achromat	Brightfield (CFI Plan)	1X		0.04	3.20	—			◎				△	△		
		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	0.35/0.18	—/0.17		✓	◎	●			△	○		
		100X Oil	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 100X Oil	Oil	1.25	0.20	0.17		✓	○			◎ PH3	△	△		
	No cover glass (CFI Plan)	NCG 40X		0.65	0.48	0		✓	◎	○●			△	○		
		NCG 100X		0.90	1.00	0		✓	◎	●			△	○		
	Phase contrast (CFI BE Plan) For E100	DL 10X		0.25	6.70	0.17			○			◎ PH1				
		DL 40X		0.65	0.60	0.17		✓	○			◎ PH2				
		DL 100X Oil	Oil	1.25	0.14	0.17		✓	○			◎ PH3				
	Brightfield (CFI BE Plan) For E100	4X		0.10	25.00	—/0.17			◎							
		10X		0.25	6.70	0.17			◎							
		20X		0.25	6.70	0.17			◎							
		40X		0.65	0.60	0.17		✓	◎							
		60X		0.80	0.25	0.17		✓	◎							
		100X Oil	Oil	1.25	0.14	0.17		✓	◎							
	Brighfield (CFI E Plan) For E200	4X		0.10	30.00	0			◎				△	○		
		10X		0.25	7.00	0			◎	△			△	○		
		40X		0.65	0.65	0.17		✓	◎	○●			△	○		
		100X Oil	Oil	1.25	0.23	0.17		✓	◎				△	○		
	IMSI (CFI Plan)	LWD IMSI 100XC		0.85	1.30-0.95	0.60-1.30	✓		○	●	○		○	○		
S Plan Fluor	Brightfield (CFI S Plan Fluor)	ELWD 20XC		0.45	8.20-6.90	0-2.00	✓		◎	○●	○		○	◎	◎	●
		ELWD 40XC		0.60	3.60-2.80	0-2.00	✓		◎	○●	○		○	◎	◎	●
		ELWD 60XC		0.70	2.60-1.80	0.10-1.30	✓		◎	○●	○		○	◎	◎	
	Apodized phase contrast (CFI S Plan Fluor)	ELWD ADM 20XC		0.45	8.20-6.90	0-2.00	✓		○	○●		◎ PH1		○	○	●
		ELWD ADM 40XC		0.60	3.60-2.80	0-2.00	✓		○	○●		◎ PH2		○	○	●
		ELWD ADL 60XC		0.70	2.60-1.80	0.10-1.30	✓		○	○●		◎ PH2		○	○	
	Advanced modulation contrast (CFI S Plan Fluor)	ELWD NAMC 20XC		0.45	8.20-6.90	0-2.00	✓		○					○	○	
		ELWD NAMC 40XC		0.60	3.60-2.80	0-2.00	✓		○					○	○	
Super Fluor	Brightfield (CFI Super Fluor)	4X		0.20	15.50	—			◎				△	◎	◎ 340	●
		10X		0.50	1.20	0.17		✓	◎	○●	○		△	◎	◎ 340	●
		20X		0.75	1.00	0.17		✓	◎	○●	○		△	◎	◎ 340	●
		40XC		0.90	0.30	0.11-0.23	✓	✓	◎	●	○		△	◎	◎ 340	
		40X Oil	Oil	1.30	0.22	0.17		✓w/stopper	◎		○	EXT PH3-40X	△	◎	◎ 340	●
		100XS Oil	Oil	0.50-1.30	0.20	0.17		✓	◎	○●			△	◎	◎ 340	
Universal Plan Fluor	No cover glass polarizing (TU Plan Fluor EPI)	P 5X		0.15	23.50	0			◎				◎	◎	◎	
		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		✓	◎				◎	◎	◎	

Note 1. Model name
The below letters, when included in the model names, indicate the respective features.
F: for use with 1.2mm-thick cover glass
C: with correction ring
AC: with correction ring compatible with Auto Correction Collar
NCG: for use without cover glass
S: with iris
WI: water immersion type
W: water dipping type
Mi: multi immersion (oil, water, glycerin) type
IMSI: for IMSI
DS: compatible with dispersion staining microscopy

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)

Note 4. Phase rings are classified by objective NA
PHL, PH1, PH2, PH3: condenser cassette modules.
EXT PH3, EXT PH4: external phase contrast modules for Ti2-E.

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
340: high transmittance with an ultraviolet wavelength range of up to 340nm

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
														Visible light	UV	NIR	
Plan Fluor	Brightfield (CFI Plan Fluor)	4X		0.13	17.20	–			◎				△	◎	◎		
		10X		0.30	16.00	0.17			◎	△	○		○	◎	◎		●
		20X		0.50	2.10	0.17			◎	○●	○		○	◎	◎		
		20XC 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 Oil	Oil	1.30	0.24	0.17		✓w/stopper	◎		○	EXT PH3-40X	○	◎	◎		●
		60XC		0.85	0.40-0.31	0.11-0.23	✓	✓	◎	●	○		○	◎	◎		
		60XS Oil	Oil	0.50-1.25	0.22	0.17		✓	◎	○●	○	EXT PH3-60X	○	◎	◎		
		100X Oil	Oil	1.30	0.16	0.17		✓w/stopper	◎		○		○	◎	◎		●
		100XS Oil	Oil	0.50-1.30	0.16	0.17		✓	◎	○●	○		○	◎	◎		
	Phase contrast (CFI Plan Fluor)	DL 4XF		0.13	16.50	1.20			○			◎ PHL		○	○		
		DLL 10X		0.30	16.00	0.17			○	△		◎ PH1		○	○		●
		DL 10XF		0.30	15.20	1.20			○	△		◎ PH1		○	○		●
		DLL 20X		0.50	2.10	0.17			○	○●		◎ PH1		○	○		●
		DLL 40X		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		●
		DLL 100X Oil	Oil	1.30	0.16	0.17		✓w/stopper	○			◎ PH3		○	○		●
		DM 40X		0.75	0.66	0.17		✓	○	○●		◎ PH2		○	○		
		BM 40X		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)	Lambda 2X		0.10	8.50	–			◎				○	◎	△	◎	
		Lambda 4X		0.20	20.00	–			◎				○	◎	△	◎	●
		Lambda 10X		0.45	4.00	0.17		✓	◎	△	○		○	◎	△	◎	●
		Lambda 20X		0.75	1.00	0.17		✓	◎	○●	○		○	◎	△	◎	●
		VC 20X		0.75	1.00	0.17		✓	◎	○●	○		○	◎	○		●
		Lambda 40XC		0.95	0.21 (0.27-0.15)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	●
		Lambda 60XC		0.95	0.15 (0.21-0.09)	0.11-0.23	✓	✓	◎	●	○		○	◎	△	◎	
		Lambda 60X Oil	Oil	1.40	0.13	0.17		✓	◎		○	EXT PH3-60X	○	◎	△	◎	●
		VC 60XC WI	Water	1.20	0.31-0.28	0.15-0.18	✓	✓	◎		○	EXT PH3-60X	○	◎	◎		●
		IR 60XC WI	Water	1.27	0.17 (0.18-0.16)	0.15-0.19	✓	✓	◎		○	EXT PH3-60x	○	○	△	◎	●
		Lambda 100X Oil	Oil	1.45	0.13	0.17		✓	◎		○	EXT PH3-100X EXT PH4-100X	○	◎	△	◎	●
		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)	DM Lambda 20X		0.75	1.00	0.17		✓	○	○●		◎PH2		○	△	○	●
		DM Lambda 40XC		0.95	0.21 (0.27-0.15)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	●
		DM Lambda 60XC		0.95	0.15 (0.21-0.09)	0.11-0.23	✓	✓	○	●		◎PH2		○	△	○	
		DM Lambda 60X Oil	Oil	1.40	0.13	0.17		✓	○	●		◎PH3		○	△	○	●
		DM Lambda 100X Oil	Oil	1.45	0.13	0.17		✓	○			◎PH3		○	△	○	●
	Tissue Clearing (CFI Plan Apo)	10XC Glyc	Water, Oil, Glycerin	0.50	Upright: 5.50 Inverted: 2.20	0-0.17	✓*1		◎	○●				◎		○	
	Super-resolution (CFI SR Plan Apo)	IR 60XC WI	Water	1.27	0.18-0.16	0.15-0.19	✓	✓	◎		○	EXT PH3-60X	○	◎	○	◎	●
		IR 60XAC WI	Water	1.27	0.18-0.16	0.15-0.19	✓		◎		○	EXT PH3-60X	○	◎	○	◎	●
	Super-resolution (CFI HP Plan Apo)	VC 100XC Oil	Oil	1.40	0.13	0.17	✓	✓	◎		○	EXT PH3-100X	○	◎	△		●
	Super-resolution (CFI SR HP Plan Apo)	Lambda S 100XC Sil	Silicone Oil	1.35	0.30	0.15-0.19 (23-37℃)	✓		◎		○		○	◎	◎		
Apochromat	Confocal (CFI Apo)	LWD Lambda S 20XC WI	Water	0.95	0.95	0.11-0.23	✓		◎	●	○		○	○		○	●
		Lambda S 40XC WI	Water	1.25	0.20-0.16	0.15-0.19	✓	✓	◎		○	EXT PH3-40X	○	◎	◎		●
		LWD Lambda S 40XC WI	Water	1.15	0.60 (0.62-0.58)	0.15-0.19	✓		◎	●	○	EXT PH3-40X	○	◎	◎		●
		Lambda S 60X Oil	Oil	1.40	0.14	0.17		✓	◎		○	EXT PH3-60X	○	◎	◎		●
	Evanescent (CFI Apo)	TIRF 60XC Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.15-0.21(37℃)	✓		◎		○	EXT PH4-60X	○	◎	△		●
		TIRF 100XC Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.14-0.20(37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●
	Super-resolution (CFI SR Apo)	TIRF 100XAC Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.14-0.20 (37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●
	Super-resolution (CFI HP Apo)	TIRF 100XAC Oil	Oil	1.49	0.12	0.13-0.19 (23℃) 0.14-0.20 (37℃)	✓		◎		○	EXT PH4-100X	○	◎	△		●
	Super-resolution (CFI SR HP Apo)	TIRF 100XC 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	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
														Visible light	UV	NIR	
Asbestos	Phase Contrast (CFI)	R-DS 10X		0.25	7.00	0.17						◎PH1					
	Phase Contrast (CFI Plan)	C-DS 10X		0.25	13.00	0.17						◎PH2					
	Phase Contrast (CFI Plan Fluor)	R-DS 40X		0.75	0.66	0.17		✓				◎PH2					

Type	Use	Model	Immersion	NA	W.D. (mm)	Cover glass thickness	Correction ring	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Near-infrared DIC
														Visible light	UV	
Water Dipping	Confocal (CFI75 Apo)	25XC W	Water	1.10	2.00	0	✓		◎	●	○		○	◎	○	○
		25XC W 1300	Water	1.10	2.00	0	✓		◎	●	○		○	◎	○	○
	Brightfield (CFI Plan Fluor)	10X W	Water	0.30	3.50	0			◎	△	○		○	◎	◎	○
	Brightfield (CFI Fluor)	20X W	Water	0.50	2.00	0			◎	○●	○		○	◎	◎	○
		40X W	Water	0.80	2.00	0			◎	●	○		○	◎	◎340	○
		60X W	Water	1.00	2.00	0			◎	●	○		○	◎	◎	○
	Brightfield (CFI Apo)	NIR 40X W	Water	0.80	3.50	0			◎	●	○		○	◎	△	◎
		NIR 60X W	Water	1.00	2.80	0			◎	●	○		○	◎		◎
	Brightfield (CFI Plan)	100XC W	Water	1.10	2.50	0	✓		◎	●	○		○	◎		○
	Phase contrast (CFI Fluor)	DLL 40X W	Water	0.80	2.00	0			○	●		◎ PH2		○	○	○
	Brightfield (CFI75)	LWD 16X W *2	Water	0.80	3.00	0			◎	●	○		○	◎	○	○

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

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

Note 8. Ti2-E PFS
● : compatible with PFS

*1 With correction for refractive index of immersion medium
*2 Dedicated for FN1 (CFI75 objective)

Combinations of DIC Prisms and Objectives

For Ti2 and Ts2R*1 series inverted microscopes

		LWD Condenser Lens						CLWD Condenser Lens, HNA Dry Lens				HNA Oil Lens			
		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	Super Fluor 10X S Fluor 10X Plan Apo Lambda 10X	LWD N1 Dry	10X	—				—				—			
20X	S Plan Fluor ELWD 20XC	LWD N1 Dry	20XC II												
	Super Fluor 20X Plan Fluor 20X Plan Fluor 20XC MI Plan Apo Lambda 20X Plan Apo VC 20X	LWD N2 Dry	20X	LWD N1 Dry	20X-C			HNA N2 Dry	20X			HNA N2 Oil	20X		
	Apo LWD Lambda S 20XC WI		60X II-R	—					60X II-R	—			60X II-R	—	
40X	S Plan Fluor ELWD 40XC	LWD N1 Dry	40XC					—				—			
	Super Fluor 40XC Plan Fluor 40X Plan Apo Lambda 40XC Apo LWD Lambda S 40XC WI	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 Super Fluor 40X Oil Apo Lambda S 40XC WI		40X II	—					40X II				40X II		
60X	S Plan Fluor ELWD 60XC	LWD N1 Dry	60XC					—				—			
	Plan Apo Lambda 60XC Apo TIRF 60XC 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	60X I	HNA NR Oil	60X I-R
	Plan Fluor 60XC Plan Fluor 60XS Oil Plan Apo Lambda 60X Oil Apo Lambda S 60X Oil		60X II				60X II-R		60X II		60X II-R		60X II		60X II-R
	Plan Apo VC 60XC WI Plan Apo IR 60XC WI SR Plan Apo IR 60XC WI SR Plan Apo IR 60XAC WI		60X IV	—			60X IV-R		60X IV		60X IV-R		60X IV		60X IV-R
100X	Plan Apo Lambda 100X Oil Plan Apo VC 100X Oil HP Plan Apo VC 100XC Oil SR HP Plan Apo Lambda S 100XC Sil Apo TIRF 100XC Oil SR Apo TIRF 100XAC Oil HP Apo TIRF 100XAC Oil SR HP Apo TIRF 100XC 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 100XS Oil		100X II				100X II-R		100X II		100X II-R		100X II		100X II-R
	Plan LWD IMSI 100XC	IMSI N2 Dry	100X III			—		—		—		—		—	
	Plan Apo VC 100X Oil*2		100X I	IMSI N2 Dry	100X I-R										

*1 Compatible with the LWD condenser lens only. Contact Nikon for information about compatible objectives. *2 When used for IMSI

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	Super Fluor 10X Plan Fluor 10X Plan Apo Lambda 10X	N1 Dry	10X	—				—			
20X	S Plan Fluor ELWD 20XC	N1 Dry	20XC II								
	Super Fluor 20X Plan Fluor 20X Plan Fluor 20XC MI Plan Apo Lambda 20X Plan Apo VC 20X	N2 Dry	20X	N1 Dry	20X-C			N2 Oil	20X		
40X	S Plan Fluor ELWD 40XC	N1 Dry	40XC	—							
	Super Fluor 40X Plan Fluor 40X Plan Apo Lambda 40XC	N2 Dry	40X I	N1 Dry	40X I-C			N2 Oil	40X I		
	Super Fluor 40X Oil Plan Fluor 40X Oil		40X II	—					40X II		
60X	S Plan Fluor ELWD 60XC	N1 Dry	60XC					—			
	Plan Apo Lambda 60XC Apo TIRF 60XC Oil	N2 Dry	60X I			NR Dry	60X I-R	N2 Oil	60X I	NR Oil	60X I-R
	Plan Fluor 60XS Oil Plan Fluor 60XC Plan Apo Lambda 60X Oil Apo Lambda S 60X Oil		60X II	—			60X II-R		60X II		60X II-R
	Plan Apo VC 60XC WI		60X IV				60X IV-R	—		—	
100X	Plan Apo Lambda 100X Oil Plan Apo VC 100X Oil Plan Apo NCG 100X Oil Apo TIRF 100XC 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 100XS Oil		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 10X W	N1 Dry	10X
16X	LWD 16XW (CFI75)	N2 Dry	16X I
20X	Fluor 20X W		20X
25X	Apo 25XC W Apo 25XC W 1300		25X I

		FN-C LWD Condenser	
		Condenser Module	DIC Slider
40X	Apo NIR 40X W Fluor 40X W	N2 Dry	40X III
60X	Apo NIR 60X W Fluor 60X W		60X I
100X	Plan 100XC W		100X III

Epi-fluorescence Filter Cubes

Filter Cubes for Ni-E/U, Ci-E/L/S, Ti2-E/A/U, Ts2R-FL*1 AZ100/100M

Excitation	Filter Cubes	Wavelengths	Characteristics
UV	UV-1A	EX 365/10 DM 400 BA 390	•Narrow band pass—only 365nm (i line) of Mercury spectrum used •Narrow band pass minimizes auto-fluorescence and photo-bleaching
	UV-2A	EX 355/50 DM 400 BA 410	•Standard filter cube for UV
	DAPI	EX 375/28 DM 415 BA 460/60	•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 400/40 DM 430 BA 440	•Standard filter cube for V
BV	BV-2A	EX 420/40 DM 455 BA 460	•Standard filter cube for BV
B	B-2A	EX 470/40 DM 505 BA 510	•Standard filter cube for B •For FITC + Counter-stain (TRITC, PI)
	FITC	EX 480/30 DM 505 BA 535/45	•Soft coated type for high signal/noise •For FITC (green), cutting off Rhodamine red •Band-pass Barrier Filter used to cut off red
	GFP-B	EX 470/40 DM 500 BA 535/50	•Bandpass filter cube for GFP
G	G-2A	EX 535/50 DM 575 BA 580	•Standard filter cube for G
	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
	Texas Red	EX 560/40 DM 595 BA 630/60	•For Texas Red® •Soft coated type for high signal/noise •Band-pass Barrier Filter used to cut off reds above 660nm

*1 Only when the Ts2R-FL is used in combination with the HG Precentered Fiber Illuminator Intensilight.

High Quality Filter Cubes for Fluorescent Protein/Fluorophore

The HQ series causes minimal image shifts when superimposing multi-color images by adopting high-dimension accuracy glass. 32 mm diameter filter cubes for large FOV imaging are also available for the Ti2 series inverted microscope.

Filter Cubes	Wavelengths
DAPI-U HQ	EX 395/25, DM 425, BA 460/50
CFP HQ	EX 436/20, DM 455, BA 480/40
GFP HQ	EX 470/40, DM 495, BA 525/50
FITC HQ	EX 480/40, DM 510, BA 535/50
YFP HQ	EX 500/20, DM 515, BA 535/30
Cy3 HQ	EX 535/40, DM 565, BA 590/40
mCherry HQ	EX 570/40, DM 600, BA 645/75
Cy5 HQ	EX 620/60, DM 660, BA 700/75

Multi-Band Filter Cubes

Filter Cubes	Applications
Dual	DAPI/FITC
	CFP/YFP
	GFP/DsRed
	FITC/Texas Red
Triple	DAPI/FITC/TRITC
	DAPI/FITC/Texas Red

Filter Cubes for Ts2-FL/Ts2R-FL/E200 (LED illumination)

Filter Cubes	Wavelengths
C-LED385	EX 390/38, DM 420, BA 475/90
C-LED455*2	EX 448/23, DM 465, BA 472
C-LED470	EX 470/40, DM 500, BA 534/55
C-LED505*2	EX 496/29, DM 518, BA 543/37
C-LED525	EX 525/50, DM 560, BA 597/58
C-LED560*2	EX 550/50, DM 600, BA 630/75
C-LED590*2	EX 561/75, DM 610, BA 652/65
C-LED625	EX 621/58, DM 660, BA 706/73

*2 Incompatible with E200

Filter Cubes for SMZ25/18

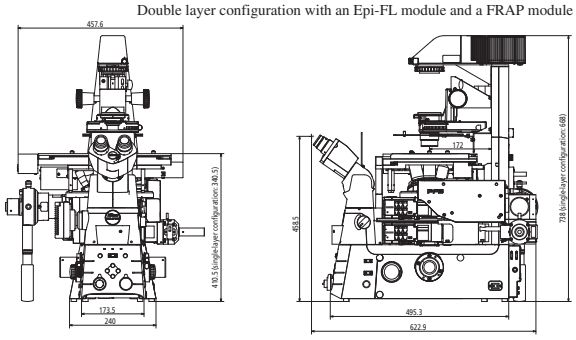
Filters	Wavelengths
DAPI	EX395/25, DM425, BA460/50
CFP	EX436/20, DM455, BA480/40
GFP-B	EX460-500, DM505, BA510-560
GFP-L	EX460-500, DM505, BA510
YFP	EX500/20, DM515, BA535/30
RFP	EX530-560, DM570, BA590
mCherry	EX560/40, DM585, BA630/75

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

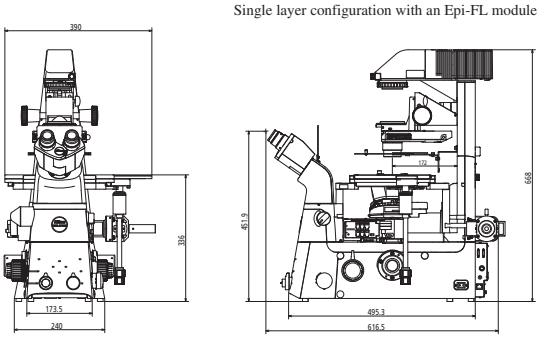
Ti2-E

Double layer configuration with an Epi-FL module and a FRAP module

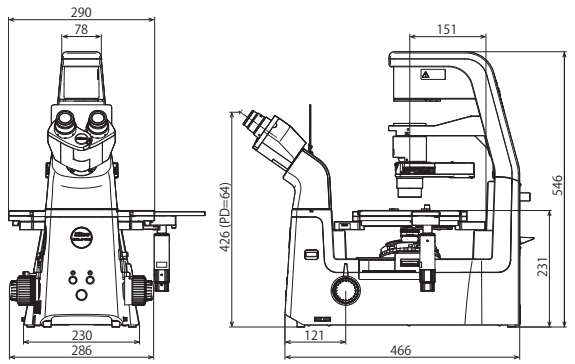


Ti2-A/U (Illustration is of Ti2-A)

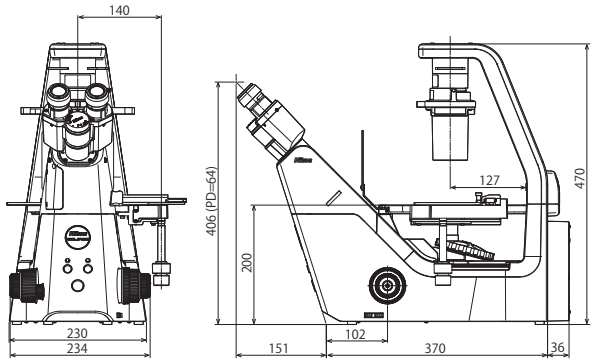
Single layer configuration with an Epi-FL module



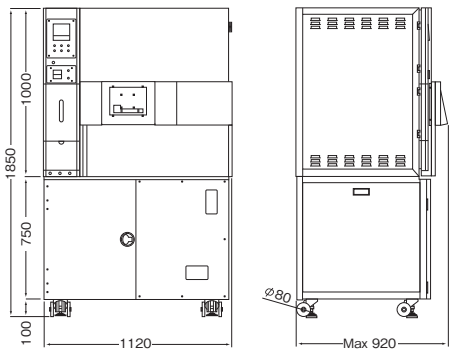
Ts2R/Ts2R-FL (Illustration is of Ts2R-FL)



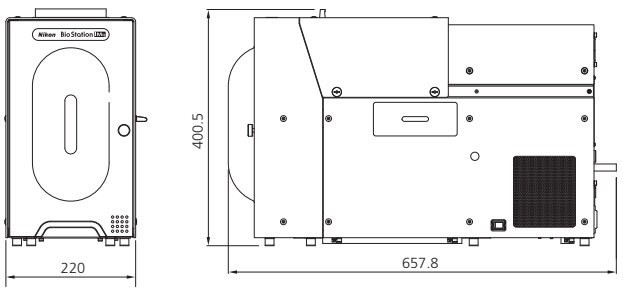
Ts2/Ts2-FL (Illustration is of Ts2-FL)



BioStation CT

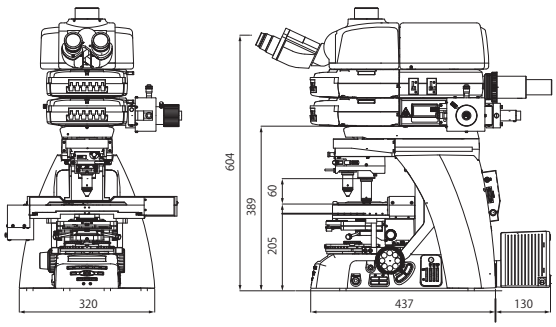


BioStation IM-Q



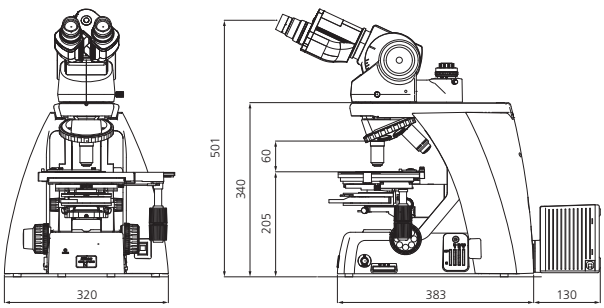
Ni-E (focusing nosepiece)

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



Ni-U

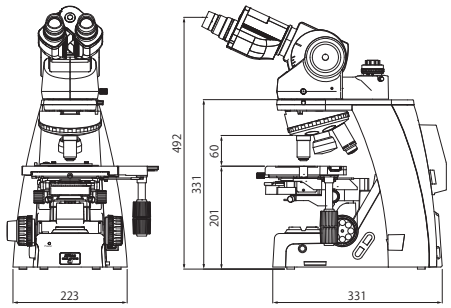
Configured with ergonomic binocular tube



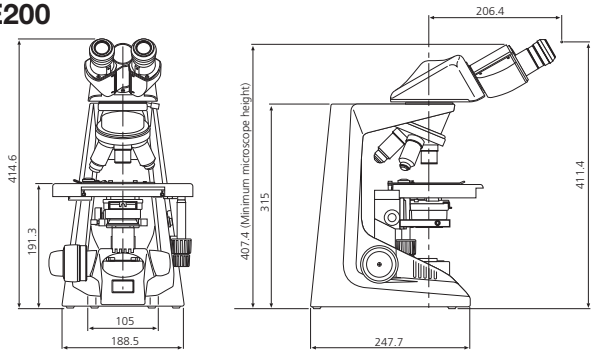
Eyepoint height: when pupillary distance is 64mm Unit: mm

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

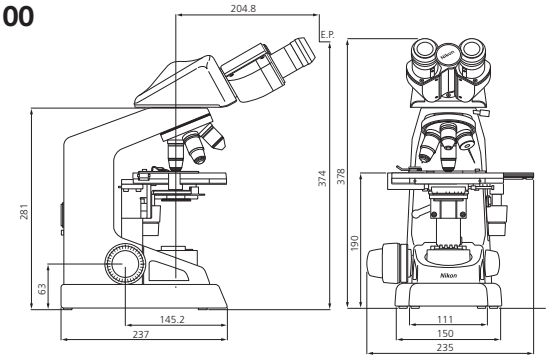
Configured with ergonomic binocular tube



E200

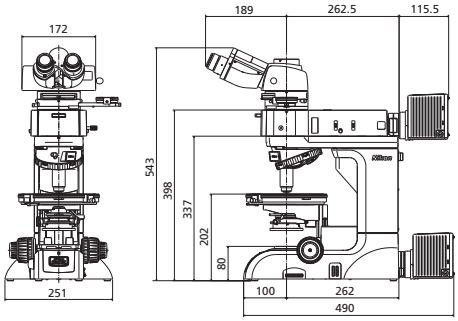


E100



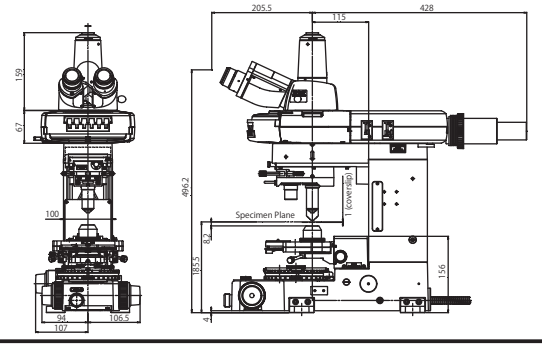
LV100N POL

Configured with Universal Epi-illuminator



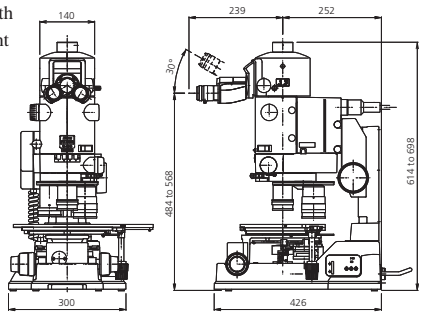
FN1

Configured with epi-fluorescence attachment



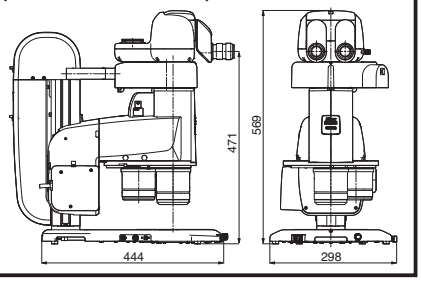
AZ100/AZ100M (Illustration is of AZ100M)

Configured with DIC attachment



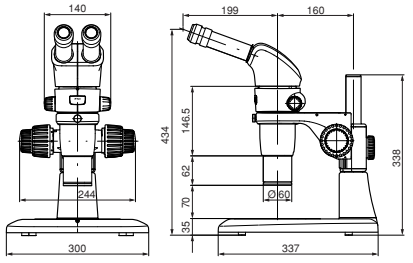
SMZ25/SMZ18 (Illustration is of SMZ25)

Configured with motorized epi-fluorescence attachment and LED DIA base



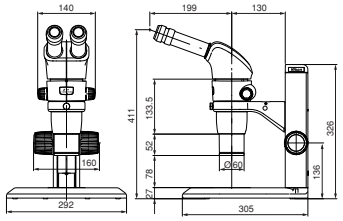
SMZ1270/SMZ1270i

Configured with binocular tube and P-PS32 plain stand



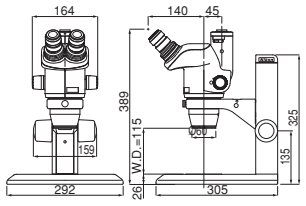
SMZ800N

Configured with binocular tube and C-PSN plain stand



SMZ745T

Configured with C-PSN Plain Stand/CN

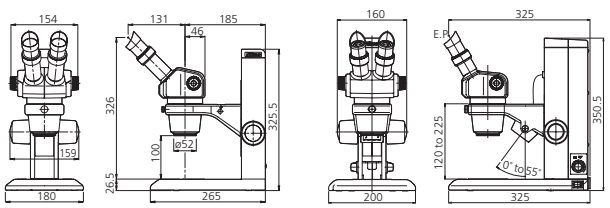


SMZ445

Configured with C-PSC plain stand

SMZ460

Configured with C-LEDS hybrid LED stand



Eyepoint height: when pupillary distance is 64mm

Unit: mm

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