



ECLIPSE Ji

SMART IMAGING SYSTEM



GOOD DESIGN
AWARD 2023



The Open Architecture Digital Inverted Microscope

The ECLIPSE Ji (Ji) is Nikon's first all-digital research grade inverted microscope. With no eyepieces, this microscope is designed to be easy to learn and use, while maintaining the optimum optical quality and large field of view (FOV) Nikon microscopes are well-known for.

Additionally, Nikon's 4th generation perfect focus system (PFS) is integrated into Ji for flexible long-term observation of specimens.

Ji's integrated enclosure means users can navigate their samples in bright outside environments or even remotely, using the embedded scientific grade CMOS detector, or use any number of other possible detector options, depending on the research application.



ECLIPSE Ji configured with Axiconic system

Digital Microscope / Wide Choice of Optics

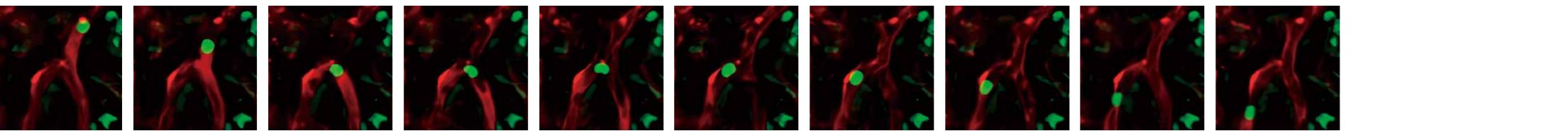
Ji is compatible with a wide variety of Nikon research objective lenses, including immersion objective lenses (water, silicon, and oil), making the microscope flexibly configurable for a variety of research applications.



Real time focus correction with Perfect Focus System

The Perfect Focus System (PFS) automatically corrects focus drift caused by temperature changes and mechanical vibrations, which can be caused by a variety of factors including the addition of reagents to the sample and multi-position imaging.

The PFS maintains focus by detecting and tracking the position of the cover slip surface in real time. Unique optical offset technology allows users to maintain focus at a desired position offset from the cover slip surface. The PFS automatically and continuously maintains focus by means of a built-in linear encoder and high speed feedback mechanism, providing highly reliable images even during long-term, complex imaging tasks.

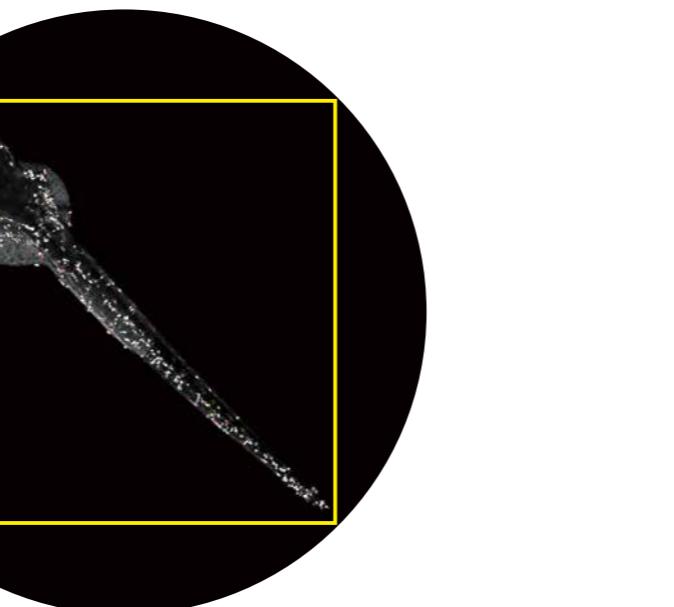


Neutrophil flowing in blood vessel (time-lapse)

Images courtesy of: Professor Masaru Ishii, Department of Immunology and Cell Biology, Graduate School of Medicine, Osaka University

25mm imaging port enabling Large View of the sample

Ji offers a 25mm field of view (FOV) capturing 2X more data in a single image compared to previous technology. The large FOV provides incredibly flat images from edge-to-edge, even with large formats sCMOS cameras, enabling users to extract quantitative data from the entire image.

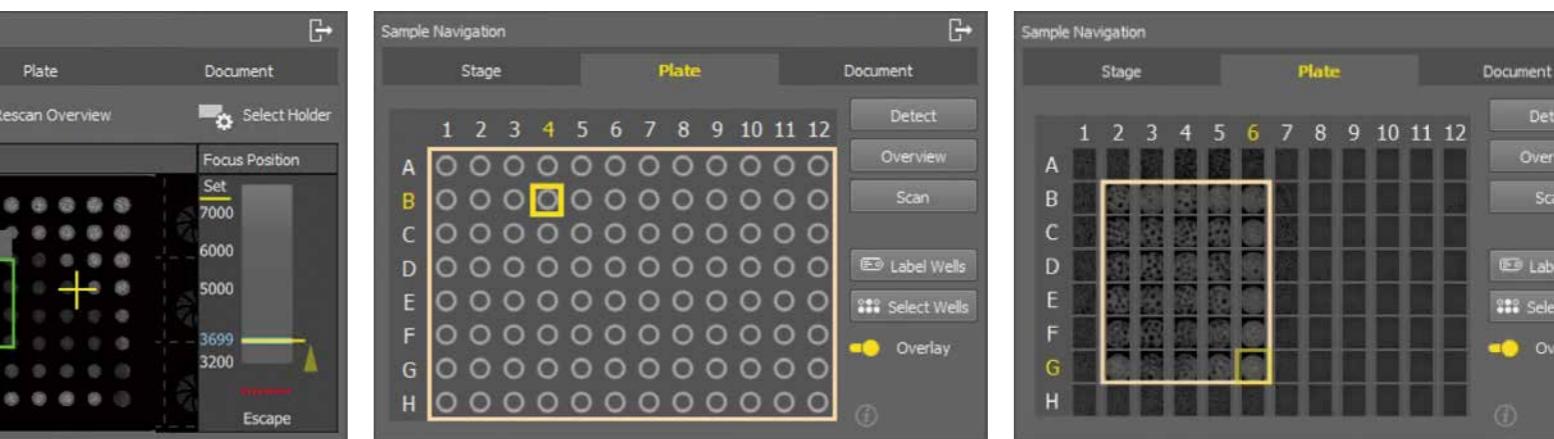


Danio sp. 2d+ embryo 4X



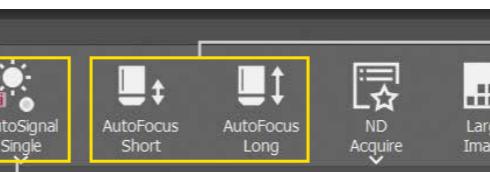
Enhanced Navigation and Detection Using AI Tools

Innovative AI-driven tools for sample navigation make it simple to find samples, set the appropriate wavelengths, exposure, and illumination power, and locate areas of interest, without the need for eyepieces. Time spent on the microscope should be running experiments, not struggling with finding the sample, adjusting parameters, and navigation.



Automatic detection of plate type and virtual display for navigation

Experiment setups quickly optimize the illumination and filter settings, and simplify the user interface to focus on the experiment



- According to the sample holder and objective lens, finds the sample focus plane quickly and effectively
- Quickly finds the optimal illumination and detector settings for the sample type, avoiding unnecessary photobleaching

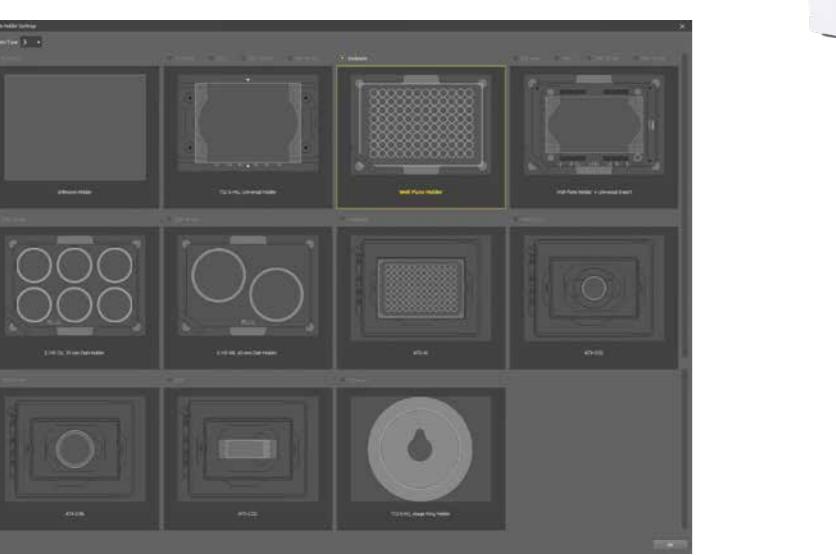
Ideal for Automated Imaging and Analysis

Ji is designed to be more simple to operate: tools to assist in focus, wavelength selection, as well as imaging tools such as shading correction, and focus offsets are built-in. Optional tools such as deconvolution are easily integrated.

Because Ji can be the platform for a large number of possible detectors, there is an extensive toolbox of analysis and processing tools available.

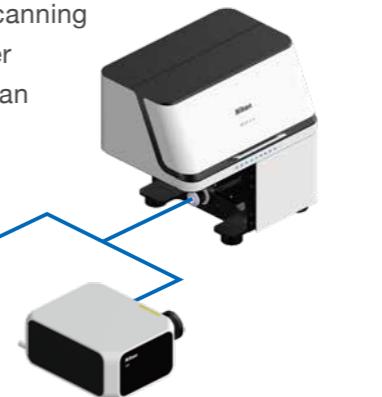
Built-In Expandability

Ji is designed to easily adapt additional imaging tools as research needs require them, including environmental chambers, automatic objective immersion devices, and others.



Use for a of Detector Options

an embedded monochrome CMOS standard, and additional detectors can be integrated into the stand depending on the needs. Point scanning systems, and other area detectors can be integrated into a optical port.

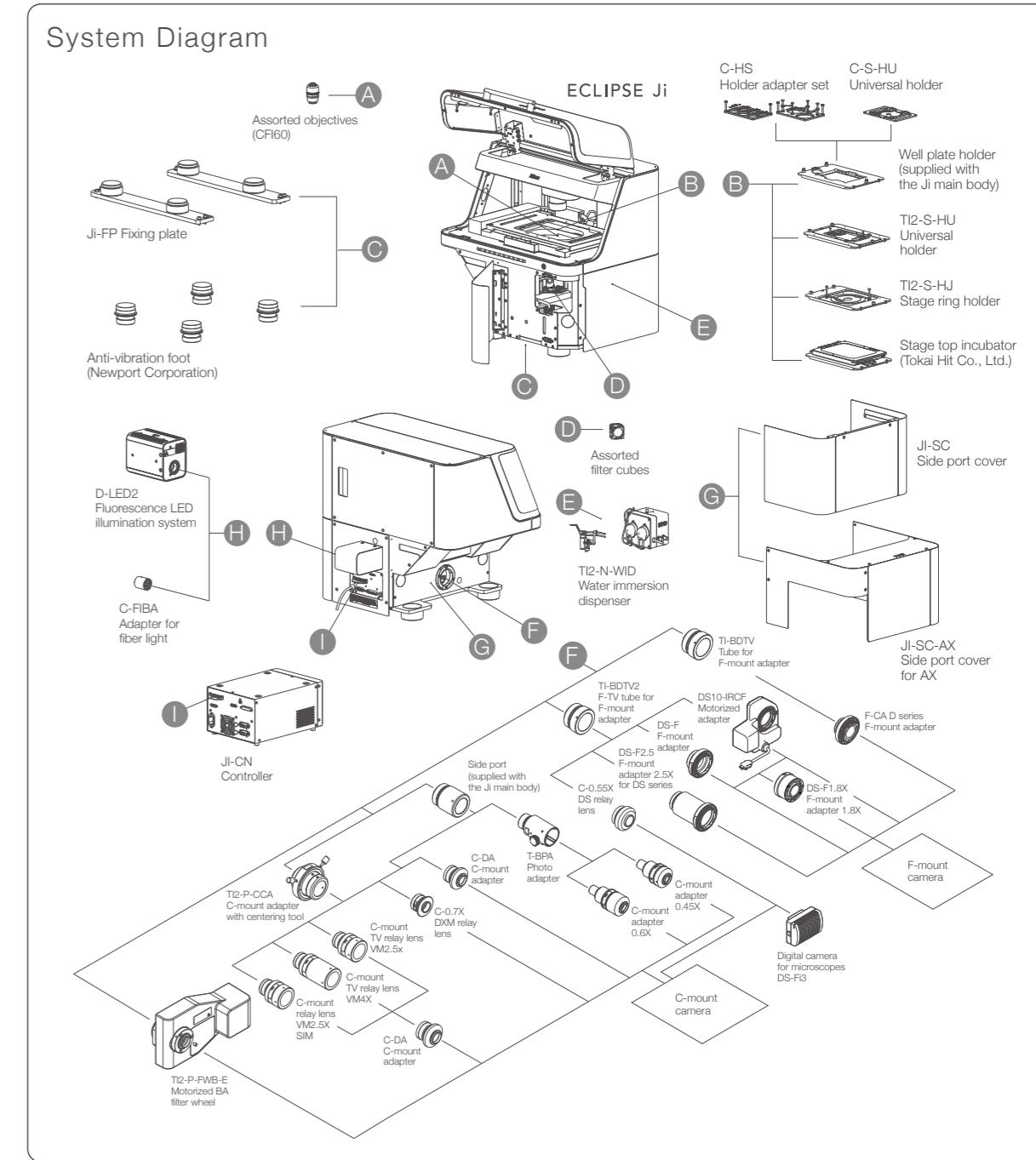


SE Ji Assay Microscope

itecture is also available
assay benchtop
, with predefined user-
omated plate scanning
data-rich output.



assay info



Specifications

| | |
|-----------------------------------|--|
| Model name | ECLIPSE Ji |
| Observation methods | Brightfield, Epi-fluorescence |
| Optical system | CFI Infinity Optical System Observation Optical System: Inverted image observation, FOV 25 Optical path switching: Switching between the built-in camera optical system and the left side port |
| Built-in camera | Imaging device: 7.8 megapixels monochrome CMOS sensor Output signal Tone: Monochrome 12 bits/8 bits Frame rate: Maximum 18 fps Output pixel number: 2800x2800 pixels (when assay used) |
| Focusing | Drive system: Motorized (Via PFS nosepiece objective lens up/down movement) Focusing stroke: About 10 mm Focusing speed: Maximum driving speed 2.5 mm/sec |
| PFS* | Focal point maintenance control: Infrared light projecting method Applicable observation methods: Brightfield, Fluorescence observation |
| Transmission illumination section | Koehler illumination Light source: LED |
| Stage | Stroke: X: ±59 mm, Y: ±39.5 mm Maximum drive speed About 25 mm/sec |

*PFS: a function that automatically corrects focal point displacement due to the passage of time and/or stage movement.

The design and specifications may differ from the actual product.



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|----------------------------|---|
| Nosepiece | Objective lens mounting holes: 6 Nosepiece drive method: Motorized |
| Fluorescence cube turret | Number of filter cubes that can be mounted: 6 (Compatible with wide-field filter cubes) Turret drive method: Motorized |
| Light distribution section | Light source used: D-LED2 fluoresce LED light source |
| PC interface | USB interface: Device interface (for built-in camera) B connector USB3.0 (SuperSpeed) |
| Input rating | 100V-240VAC±10%, 3.0 A, 50/60 Hz |
| Power consumption | 320 W |
| Power source cord | - 100 to 120 V: Power source cord of 3 conductor grounding Type SVT, NO.18 AWG, 3 m long maximum, rated at 125VAC minimum with detachable receptacles conforming to UL specifications - 220 to 240 V: Power source cord of 3 conductor grounding Type H05VV-F 1 mm ² , 3 m long maximum, rated at 250VAC minimum with detachable receptacles conforming to EU/EN specifications |

ISO 14001 Certified
for NIKON CORPORATION

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer.

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N.B. Export of the products* in this brochure is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Appropriate export procedures shall be required in case of export from Japan.

*Products: Hardware and its technical information (including software)

WARNING

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