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ECLIPSE Si Upright Microscope

ECLIPSE *Si*

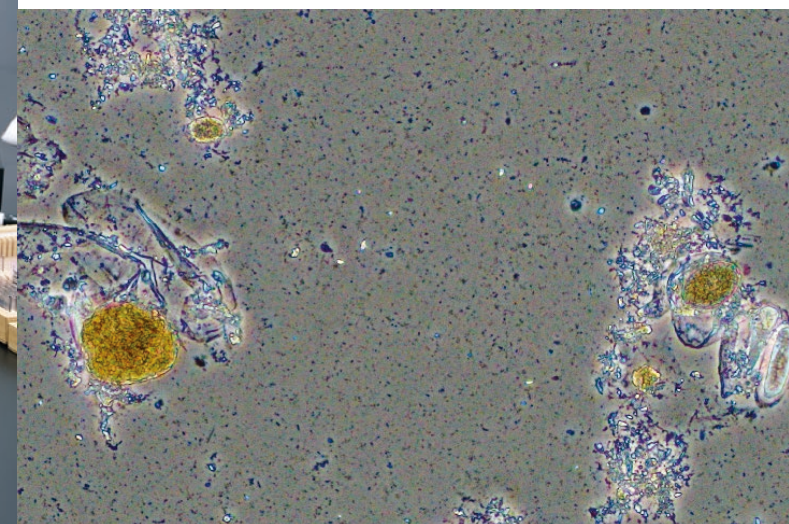
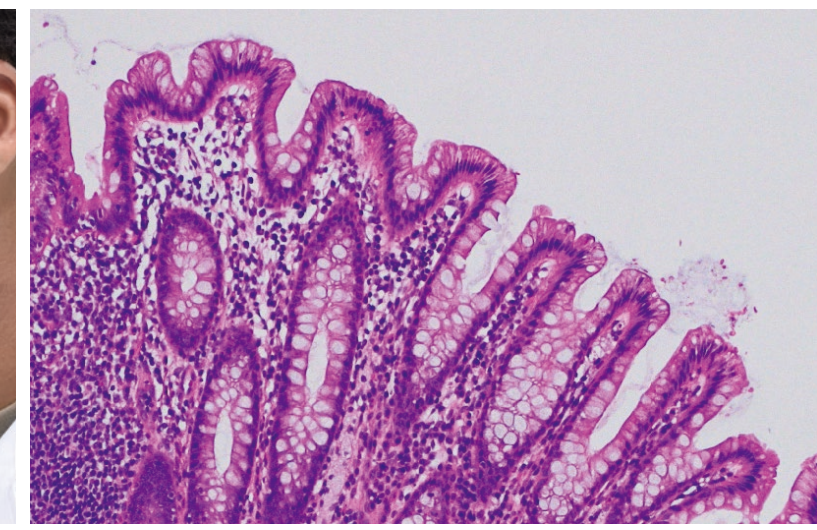
Upright Microscope



Shedding New Light
On **MICROSCOPY**

Focus in comfort. Comfort in focus.

Nikon has designed the ECLIPSE Si to meet the rigorous demands of professionals who spend hours using the microscope. The ECLIPSE Si is ergonomically designed to enhance operational efficiency. This powerful instrument helps you to stay focused for longer by reducing the strain on your body. The ECLIPSE Si is the new standard in microscopes, expanding the possibilities of exploring the micro world.



Pursuing efficient workflow

The ECLIPSE Si has been developed with the primary goal of reducing fatigue during microscope usage. The ECLIPSE Si eliminates unnecessary adjustments and enables efficient and comfortable operation. The ergonomic design also enables natural posture, even when carrying out repetitive tasks.



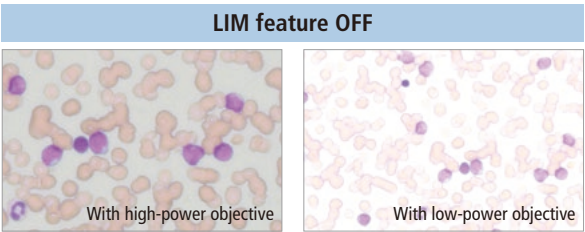
Maintains comfortable brightness when switching magnifications

Objective lenses with different magnifications transmit light to varying degrees. Therefore, light intensity must be adjusted every time the user changes the objective. In addition, when switching from high to low magnification objectives, the sudden increase in brightness often causes eye strain. The ECLIPSE Si features the intelligent Light Intensity Management (LIM) which automatically remembers and sets the light intensity level for each objective. The LIM feature reduces up to 40% of the time spent on adjusting light intensities*. With the ECLIPSE Si, users can increase comfort and save time even when the routine requires frequent magnification changes..

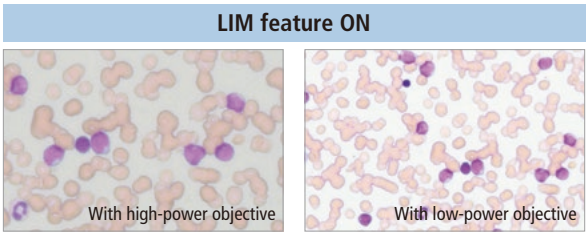
*Compared to a previous LED model as regards time required to change three objectives and adjust light intensities (test carried out by Nikon)



Push the brightness control knob briefly to activate the LIM feature.

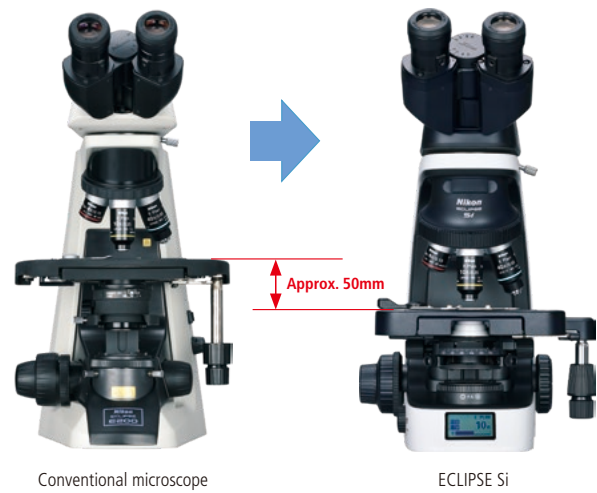


Since brightness varies depending on the objective, switching magnifications can induce eye strain.



The optimal light intensity level is automatically recalled and applied to each objective, therefore eliminating unexpected changes in light intensity when changing magnifications and streamlining workflow.

Low stage for effortless slide replacement



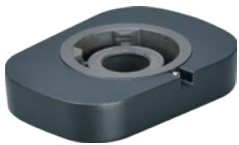
The height of ECLIPSE Si stage is 135 mm, which is about 50 mm lower than our conventional microscopes. The lower stage design reduces the range of motion required to exchange specimen slides, and in turn this can reduce arm and shoulder fatigue. Since the position of the stage movement knob is also lower, different areas on the specimen slide can be easily explored while resting your hands on the table. The lever for opening and closing the specimen holder has also been designed to be ergonomic with an easy-to-operate size and shape. Furthermore, the ECLIPSE Si features a 30% smaller stage compared to our conventional microscopes in order to optimise slide replacement.



Easy-to-operate specimen holder

Enables natural posture to be maintained throughout the entire microscope workflow

The inclination angle of the eyepiece tube is 45 degrees, which enables observation through the eyepieces while maintaining a natural posture. The low stage design also allows you to seamlessly switch from looking through the eyepieces to checking the slide placement on the stage without having to adjust your posture. An optional eye-level riser is also available to further tailor the height of the eyepieces.



Eye-level riser



Check on the stage while maintaining the observation posture

Worry free focusing thanks to vertical stop

The ECLIPSE Si is equipped with a stopper that can be used to set the upper limit of the stage height. The stage stops at the set height even when the focus knob is turned, thereby eliminating the risk of over-focusing and breaking the slides or damaging the objectives. Specimen exchange and focusing can be performed with confidence, without worrying about the stage height.



The stage does not rise above the set height.



Easy operation just by turning the screw at the height you want to set

Pursuing stress-free ease of use

We wanted to design a microscope that would eliminate fatigue incurred by frequent specimen exchanges and provide a more comfortable user experience. The ECLIPSE Si combines innovative features and intelligent design to minimize unnecessary body movements, saving time and reducing strain on the user even when examining a large number of slides.

Adjusting focus and moving the stage with one hand

The coarse and fine focus knobs are located on both sides of the microscope, making it possible to focus with either hand. In addition, the stage handle is positioned close to the focus knob, allowing users to easily adjust both the stage position and focus with the same hand. With the stage movement and focus controlled by the same hand, the other hand can be dedicated to rotating the nosepiece or replacing the slides. These features provide an efficient workflow even when examining a large number of specimen slides.



Coarse focus knob

Fine focus knob

Coarse/fine focus and stage movement can be operated with one hand

Status display

The illumination brightness is shown in a bar graph on the LCD. You can check the magnification at a glance while maintaining your observation posture.



- 1 ECO mode: ON
- 2 LIM function: ON
- 3 Brightness state

- 4 Objective name
- 5 Magnification

Knob rotation direction display

The direction of rotation of the focus and brightness control knobs can be intuitively grasped.



No hesitation in choosing a knob to operate

The icon of the stage movement knob to be operated is illustrated on the travel scale of the specimen in the forward-backward and right-left directions.



Changing magnifications comfortably

The reversed-type nosepiece provides easy access and visibility to the objective lens in use. The position of the nosepiece is low to reduce strain on the arm when frequent magnification changes are required. The nosepiece features an easy grip for smooth rotation, and accommodates up to five objective lenses to provide a wide range of magnifications.



Easy-to-rotate quintuple nosepiece

Blocks blue component in LED light

Since LED light contains a large amount of blue or short wavelength light, there is concern that prolonged observation may put a strain on the eyes. The ECLIPSE Si offers an optional blue light blocking filter that can be placed on the field lens to remove the blue component of the LED light.



Automatically powers off after a period of inactivity

The ECLIPSE Si is equipped with an ECO mode which automatically turns off the illumination after a certain period of inactivity. The length of the inactivity period is adjustable. With ECO mode, the ECLIPSE Si helps you save power without any effort.



Press and hold the brightness control knob to turn on the ECO mode

Easily share images on-site and remotely

Capture specimen images for documentation or for real-time sharing with others by configuring the ECLIPSE Si (trinocular version) with a digital camera.

When the ECLIPSE Si is configured with the Digital Sight 1000 microscope camera (optional), images of specimens can be easily displayed on the monitor for simultaneous observation by multiple people, and recorded without the use of a PC. Furthermore, by connecting the camera to a tablet PC*, images can be shared in real time with remote or off-site PCs and smart devices via a network. The DS-Fi3* high-definition microscope camera, which faithfully captures the true colors of specimens, is also available.

* NIS-Elements L imaging software is required.



Digital Sight 1000 microscope camera



Simultaneous observation and display of specimens on a monitor



Share images in real-time with PCs in another room or building

Superior Optics for High Quality Images

Nikon's advanced optical technologies, culminating from a long tradition as a microscope manufacturer, play a vital role in the ECLIPSE Si. The ability to fulfill the need for accurate observation of specimens is a source of pride for us.

Excellent image flatness and chromatic aberration correction

The ECLIPSE Si employs CFI E Plan series objectives, which feature flat, sharp images up to the periphery of the field of view. These objectives are part of the CFI60 infinity-corrected optical system, which achieves both high resolution and long working distances. A wide variety of Nikon CFI60 objectives are available.

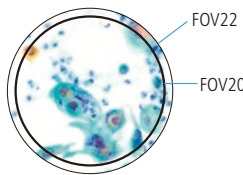


CFI E Plan series objectives

Observation with FOV of 22mm

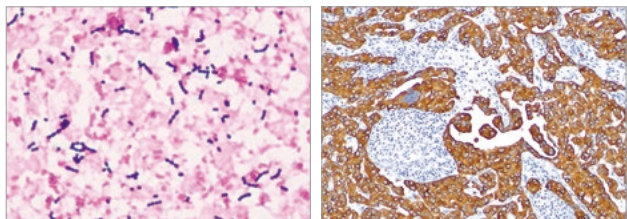
The ECLIPSE Si can enhance the efficiency of clinical observations when equipped with FOV22 tubes* and lenses that enable a large 22mm field of view.

*C-TB, C-TF, C-TT and C-TE2 tubes



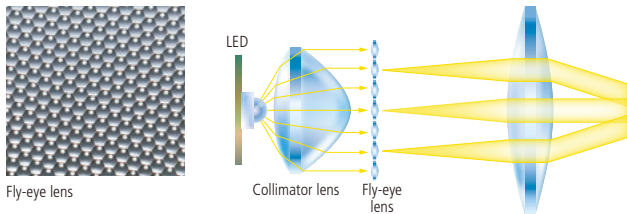
Long-life LED with constant color temperature

The high-intensity, white LED light source, features a long life of up to 60,000 hours. Since the color temperature remains constant even when the brightness is changed, the color of the image does not change when changing magnifications.



Uniform brightness up to the periphery of the field of view

The illumination system features an integrated fly-eye lens which provides uniform brightness over the entire field of view.



Blocking light from outside the field of view

The ECLIPSE Si is equipped with a field diaphragm that can be used to limit the illumination range for optimal observation and image acquisition. Adjusting the field diaphragm suppresses the occurrence of flare and ghosting, enabling high contrast image observation. During fluorescence observation, the range of photobleaching of specimens can also be limited.



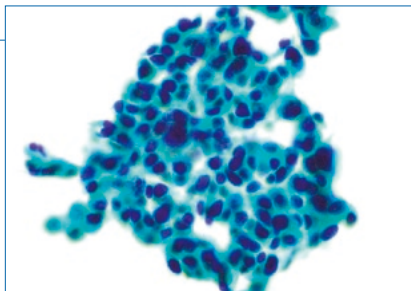
Turn the field diaphragm dial until the illumination range is circumscribed to the field of view.

Compatible with a Wide Variety of Observation Methods

Using optional accessories, the ECLIPSE Si allows for a wide variety of observation methods in addition to bright-field.

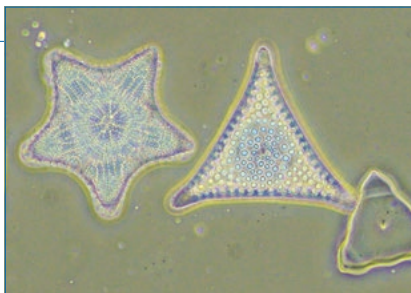
Bright-field observation

High-quality images can be acquired with bright, uniform illumination over the entire field of view, using objectives with superior image flatness and excellent chromatic aberration correction.



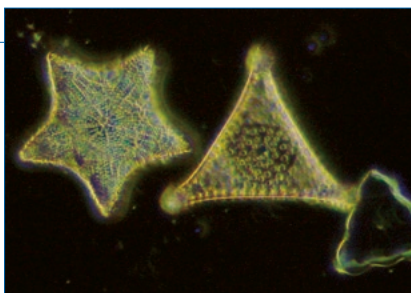
Phase contrast observation

Combining of a phase condenser and phase contrast objectives enables observation of colorless and transparent specimens with high contrast, without staining or labeling the specimens with dyes. A standard Abbe condenser, with a PH slider inserted, also allows phase contrast observation.



Dark-field observation

By inserting a slider for dark-field microscopy into the condenser slot and using oblique illumination, light scattered by specimens can be visualized. This method is effective for observation of unstained specimens such as live bacteria and examination of colloidal particles.



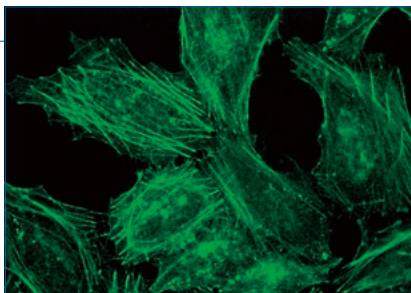
Simple polarizing observation

By attaching a polarizer to the field lens and an analyzer to the eyepiece tube mount, simple polarizing observation can be performed. The polarization state can be adjusted by turning the polarizer.



Diascopic fluorescence observation

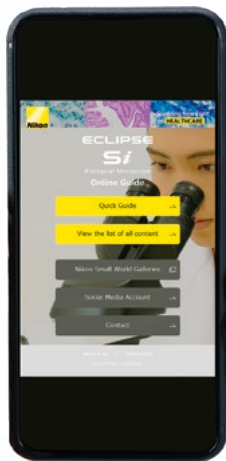
Nikon has developed a unique diascopic fluorescence illumination method that enables easy fluorescence observation without attaching dedicated episcopic illuminator and fluorescence observation equipment. By simply inserting an EX filter slider into the condenser slot and a BA filter slider into the nosepiece slot, fluorescence observation of specimens expressing GFP or stained with fluorescent dyes such as FITC and Alexa 488 can be performed.



Online Guide accessible with a Smartphone

You can access a web-based operation manual for the ECLIPSE Si on your smartphone by simply scanning the QR code sticker attached to the microscope. The Online Guide provides visual instructions including movies that enable you to quickly check how to setup and use the microscope.

*QR code is a registered trademark of DENSO WAVE INCORPORATED.

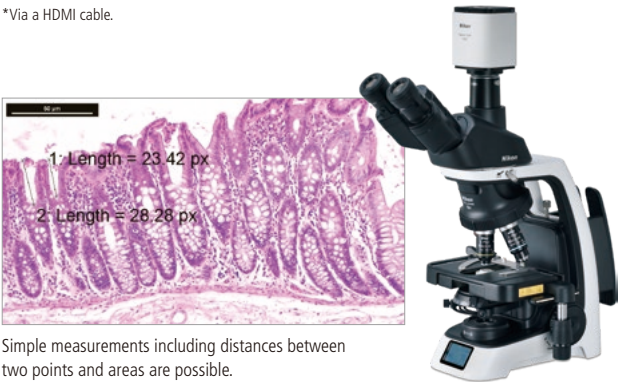


Optional accessories

Digital Sight 1000 microscope camera

Equipped with a 2-megapixel CMOS image sensor, the Digital Sight 1000 can acquire color images and movies of up to 1920 x 1080 pixels. Just connect a monitor* and a mouse, and you can easily capture images without using a PC.

*Via a HDMI cable.



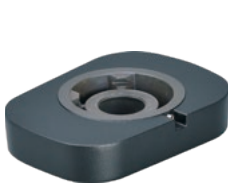
NIS-Elements L imaging software

By connecting the Digital Sight 1000 or DS-Fi3 to a tablet PC with NIS-Elements L installed, images of specimens under observation can be shared with other PCs via a network. The software also contains a variety of measurement and annotation functions.



Eye-level Riser

By mounting the eye-level riser under the eyepiece tube, the eyepoint can be raised by 25 mm. The height of the eyepiece can be adjusted to fit the observer, which allows observation in a comfortable posture.



Up to two pieces (50 mm) can be mounted.

DS-Fi3 microscope camera

Equipped with a 5.9-megapixel CMOS image sensor. The DS-Fi3 can acquire high-resolution color images of up to 2880 x 2048 pixels*. Its excellent color reproducibility enables the acquisition of images with colors faithful to those of the images observed under the microscope. Its high sensitivity also makes the DS-Fi3 ideal for acquiring fluorescence images.

*NIS-Elements L imaging software is required for controlling the camera.

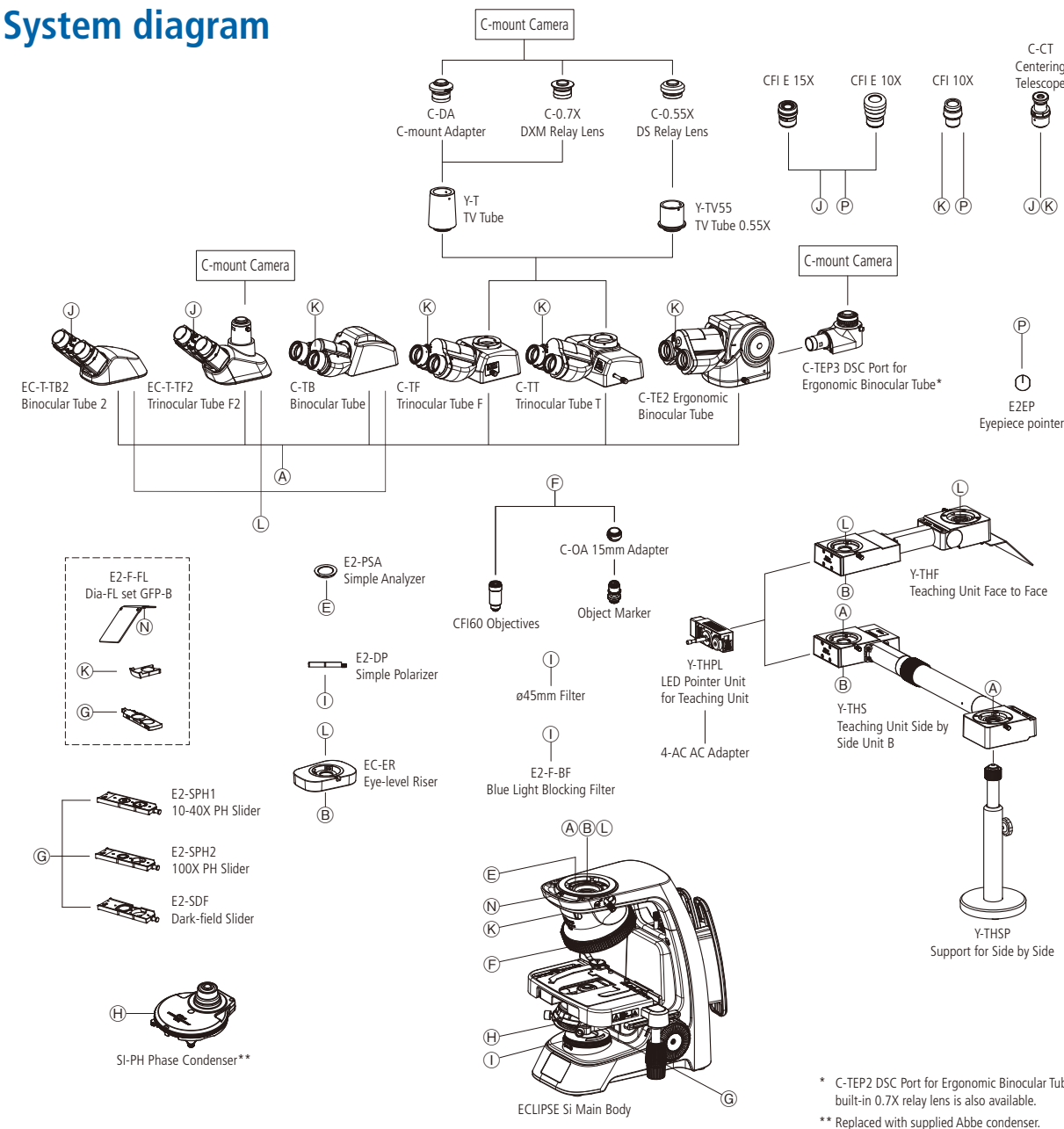


Teaching Head

Enables simultaneous observation by two people using the same microscope. Available in two types: face-to-face type and side-by-side. Areas of interest can be indicated with the built-in LED pointer.

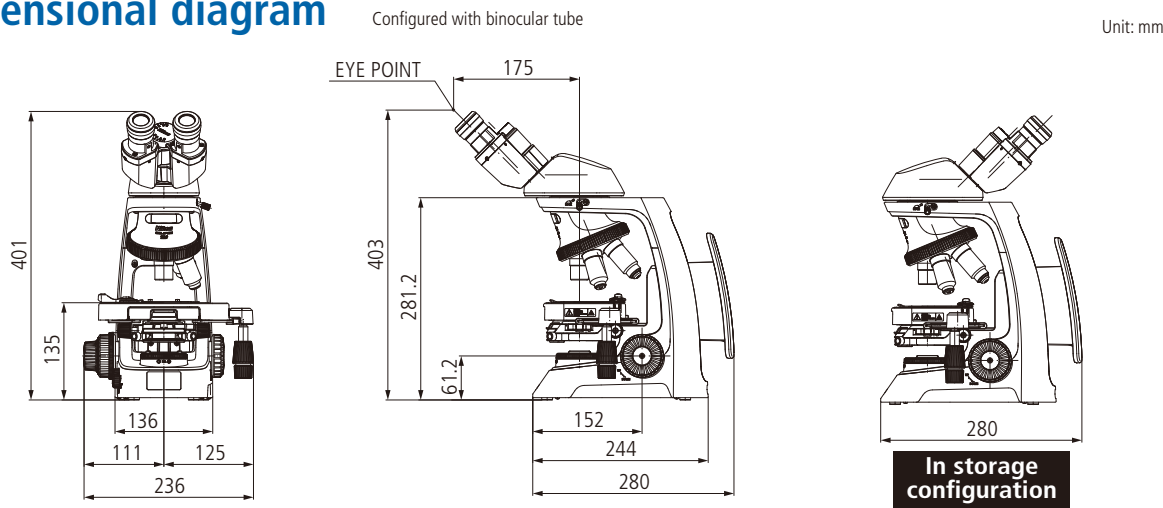


System diagram



* C-TEP2 DSC Port for Ergonomic Binocular Tube with built-in 0.7X relay lens is also available.
** Replaced with supplied Abbe condenser.

Dimensional diagram



Specifications

Model name	Main body: ECLIPSE Si
Optical system	CFI60 infinity optical system
Illumination	High luminescent white LED illuminator (Eco-illumination) - Built-in fly-eye lens - Up to two 45 mm diameter filters can be installed*1 - Light Intensity Management (LIM) feature included
Focusing	Coaxial coarse/fine focusing (located on both sides), cross roller guide, Focusing stroke: Up 2 mm/Down 13 mm, coarse: 37.7 mm per rotation, fine: 0.2 mm per rotation, minimum reading: 2 μm With coarse focus knob torque adjustment ring and stage vertical movement stopper
Eyepieces (F.O.V., mm)	With diopter adjustment - E2-CFI 10X (20)*2, E2-CFI 15X (12)*2 - CFI 10X (22)*3
Tubes	Inclination angle 45°, pupillary distance: 50-75 mm, eyepoint height: adjustable to 2 positions - EC-T-TB2 Binocular Tube 2 - EC-T-TF2 Trinocular Tube F2 (Eyepiece: Port: 50:50, built-in 0.55X relay lens in camera port, with C-mount) Inclination angle 25°, pupillary distance: 50-75 mm - C-TB Binocular Tube - C-TF Trinocular Tube F (Eyepiece: Port = 100:0, 0:100) - C-TT Trinocular Tube T (Eyepiece: Port = 100:0, 20:80, 0:100) Inclination angle 10°-30°, extension: up to 40 mm - C-TE2 Ergonomic Binocular Tube (Eyepiece: Port = 100:0, 50:50 via optional C-TEP3 DSC Port C-0.55X)
Nosepiece	Reversed-type quintuple nosepiece (within main body)
Stage	Rectangular mechanical stage (within main body), with specimen holder 2L and vernier calibrations, cross travel: 76 (X) x 52 (Y) mm
Objectives (NA/W.D.)	- CFI E Plan Achromat 4X (0.1/30mm)*4 - CFI E Plan Achromat 10X (0.25/7mm) - CFI E Plan Achromat 40X (0.65/0.65mm) - CFI E Plan Achromat 60X (0.8/0.3mm)*4 - CFI E Plan Achromat 100X Oil (1.25/0.23mm)*4 Other CFI60 objectives can also be used. Objectives for phase contrast observation: - CFI Achromat DL 10X (0.25/7.0mm) - CFI Achromat LWD DL 20X (0.40/3.90mm) - CFI Achromat DL 40X (0.65/0.65mm) - CFI Achromat DL 100X Oil (1.25/0.23mm)
Condenser	Abbe Condenser, NA 1.25, vertically movable and centerable
Observation methods*5	Brightfield, phase contrast, diascopic fluorescence, dark-field, simple polarizing
Fungus-proof treatment	Antifungal paint is applied around optical system
Optional accessories	- E2-SPH1 10X-40X PH slider/E2-SPH2 100X PH slider (used with an Abbe condenser and phase contrast objectives) - SI-PH phase condenser (used with phase contrast objectives) *6 - E2-F-FL Dia-FL set GFP-B - E2-SDF dark-field slider - E2-DP simple polarizer, E2-PSA simple analyzer - EC-ER eye-level riser - E2-F-BF blue light blocking filter - Object marker*6, *7 - Eyepiece pointer - Teaching head
Power supply	Uses the included AC adapter (input: 100-240 VAC, 0.48A Max., 50-60 Hz, output: 5.0 VDC, 3.0A Max.)
Power consumption (max.)	Nominal value: 5 W
Weight	Approx. 6.0kg (when equipped with binocular tube), approx. 6.4kg (when equipped with trinocular tube)

*1 If the thickness is 2.5 mm or less. When a simple polarizer is attached, only one filter can be installed *2 Used in combination with EC-T-TB2 Binocular Tube 2 or EC-T-TF2 Trinocular Tube F2
*3 Used in combination with C-TB Binocular Tube, C-TF/C-TT Trinocular Tubes or C-TE2 Ergonomic Binocular Tube *4 Cannot be used for dark-field observation
*5 Observations other than brightfield require optional accessories. *6 Not for medical purposes *7 A C-OA 15mm adapter is required

Cooperation between pathological specimens and imaging guidance: Dr. Yasushi Nakamura, Pathologist, Osaka Cytopathological Laboratory

Digital Sight 1000 and DS-Fi3 microscope cameras, and NIS-Elements L imaging software are not for medical purposes.

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

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 WARNING	TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.
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Appropriate export procedure shall be required in case of export from Japan.
*Products: Hardware and its technical information (including software)



ECLIPSE Si product page



Nikon Healthcare Business Unit website



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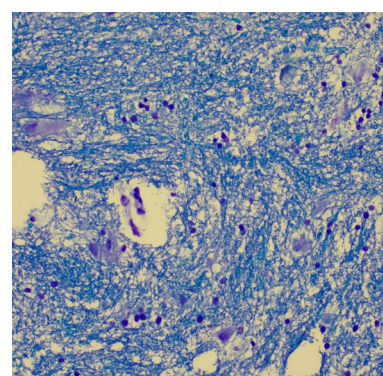
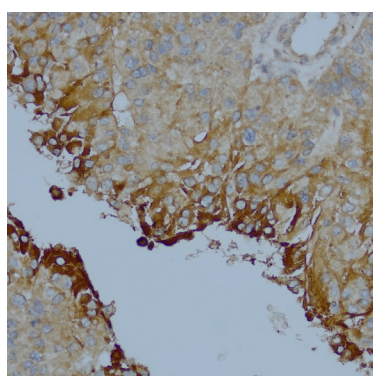
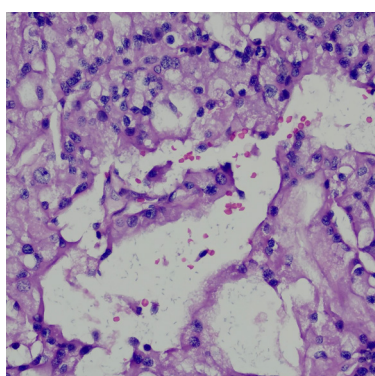
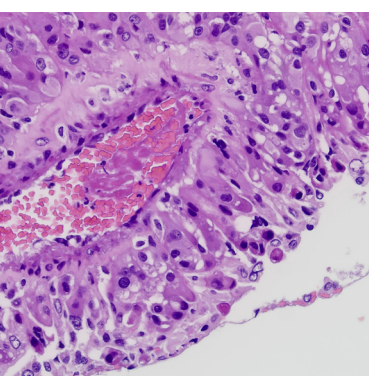
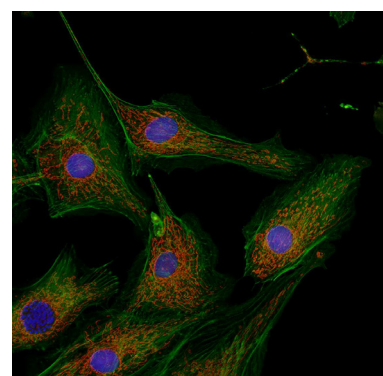
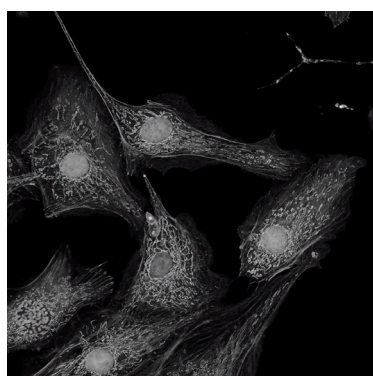
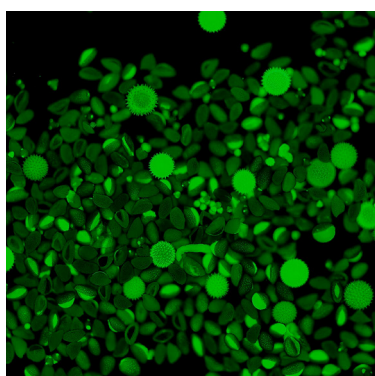
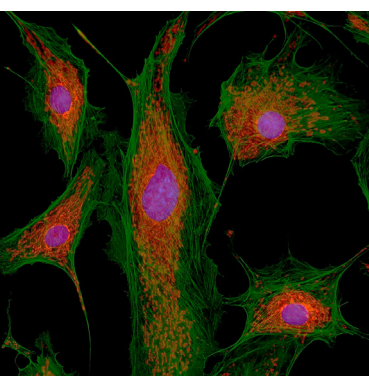
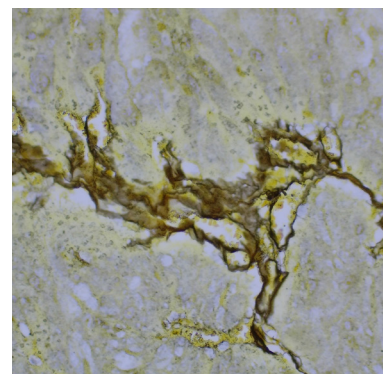
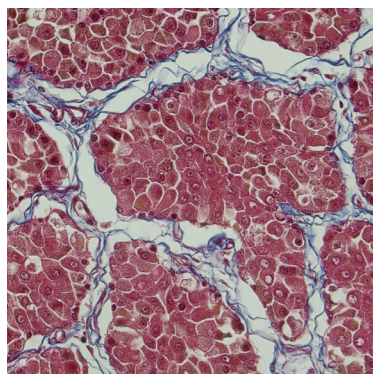
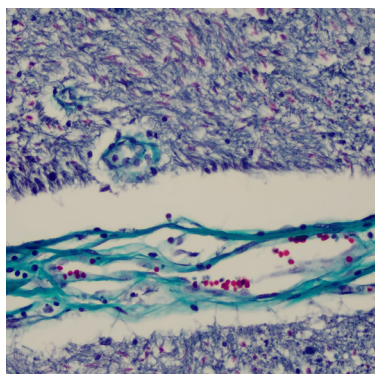
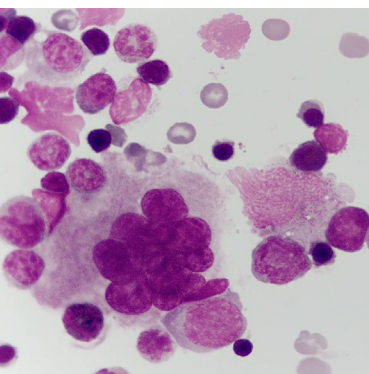
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INNOVATED FOR TOP BRAND MICROSCOPES

Create a Stunning Microscope Imaging System for You

For Trinocular Upright Microscopes



Applicable Model:
ECLIPSE Si trinocular, Ei trinocular, etc.

Solution ①

Smart Display Camera



Solution ②

Smart Camera



Solution ③

WiFi Camera



Function Comparison

● Standard ○ Optional – N/A

	Solution①	Solution②	Solution③
Built-in Android OS	●	●	–
Pre-installed Office suits	●	●	–
15.6"high color gamut monitor	●	–	–
Image output methods			
5G WiFi	●	●	●
USB	–	–	●
HDMI or DP	● DP	● DP	● HDMI
Network	–	–	●

❗ Solution③ HDMI output method is unavailable for 20.0MP cameras.

Solution① Smart Display Camera

Build a PC-free Imaging System for Your Microscope



Features & Benefits

5G WiFi and DP are simultaneous outputs



5G WiFi output

Compatible with various devices and operating systems, including Windows, iOS, and Android. Mobile devices can access the system by scanning a QR code. connects to PC via WiFi.



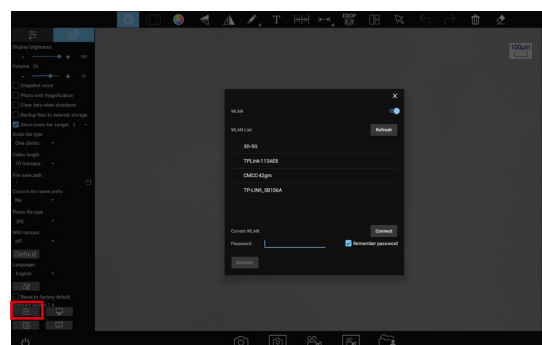
DP output

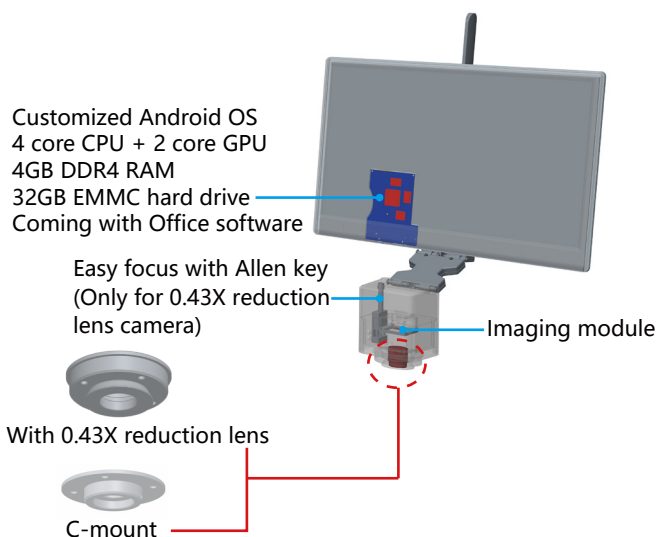
With DP output for display on monitors, TVs and projectors.



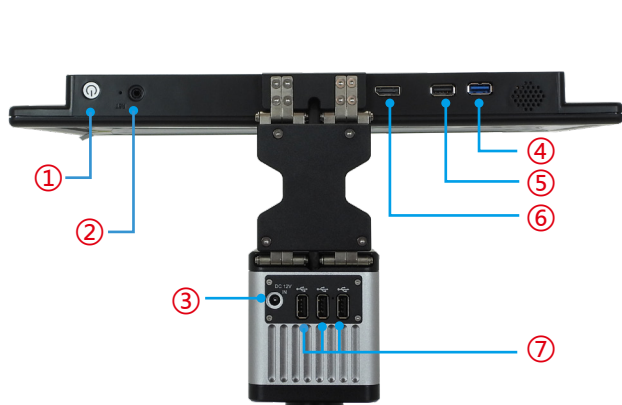
Connecting to the Internet

The camera supports wireless Internet connection (only supports 5G WiFi router signal), by entering the password of any 5G WiFi network, you can directly open the browser to access the Internet. This will allow you to take advantage of online features and functionalities directly from your camera.





- Built-in operating system Android processor RK3399, MS office suit(Word,Excel, Powerpoint) are preinstalled, no need computer.
- 15.6" high-definition ISP display.
- Comes with an imaging app that displays live images upon startup.
- Includes a high-power 0.43X reduction lens for a wide field of view.
- 32GB built-in RAM with support for external U-disk storage for pictures and videos.
- USB interface allows for easy connection of keyboards and mouse.



①	Power switch	Switch on/off.
②	Headphone and microphone ports	Connect with headset cable for audio output.
③	Power input	DC 12V 3A
④	USB 3.0 interface	Can be connected to a mouse, keyboard, USB flash drive (for copying videos and images).Or you can use the manufacturer's optional USB to DC5V power cord to power the Ei and Si.
⑤	USB 2.0 interface	
⑥	DP output interface	Transmission via DP cable, connected to a display device.
⑦	USB 2.0 interface	Can be connected to a mouse, keyboard, USB flash drive (for copying videos and images).Or you can use the manufacturer's optional USB to DC5V power cord to power the Ei and Si.
⑧	5G WiFi antenna	The omnidirectional antenna provides a broad signal coverage, ensuring connectivity across a wide area. Its design supports up to 7 simultaneous connections, accommodating a variety of mobile devices including smart-phones, tablets, and laptops.
⑨	Easy focus with allen key (Only for 0.43X reduction lens camera)	Simple and precise focus adjustment for synchronization between eyepiece and monitor.

Specifications

15.6" high color gamut display

Number of pixels	1920(horizontal) x 1080 (vertical)
Pixels arrangement	RGB vertical stripe
Colour gamut	100% (sRGB)
Display number of colors	16.7M(8Bit)
Surface treatment	Anti-glare
Surface hardness	3H
Viewing angel range	170 horizontal, 170 vertical
Contrast	800
Brightness	500cd/m ² (average of 5 points)

Applicable to	Nikon	Nikon
Models	JX200	JX200
C-mount category	D-C-12	D-C-20
With 0.43X reduction lens category	D-N-12	D-N-20
Physical resolution	12.0MP	20.0MP
Image sensor	SONY IMX412 CMOS	SONY IMX147 CMOS
Exposure mode	Rolling Shutter	Rolling Shutter
Maximum resolution	4000×3000 (12,000,000Pixels)	5184×3888 (20,155,392 Pixels)
ISO sensitivity	Equivalent to 100-12800	Equivalent to 100-12800
Sensor size	1/2.3"	1/2.3"
Pixel size	1.55μm×1.55μm	1.2μm×1.2μm
Spectral response	380-650nm	380-650nm
Exposure capability	Real-time auto and manual adjustment	Real-time auto and manual adjustment
Exposure time	10μs-333ms	10μs-333ms
White balance	Real-time auto and manual RB adjustment	Real-time auto and manual RB adjustment
Preview resolution	4000×3000@30fps,3840×2160@30fps	5184×3888@10fps,3840×2160@15fps
Power supply	DC 12V 3A	DC 12V 3A
Wireless protocol	5G WiFi IEEE802.11ac	5G WiFi IEEE802.11ac
A/D conversion bit depth	12bit	12bit
Software and App	Windows Software:KoPa Capture Pro,Embedded software:KoPa WiFi Lab AO,App:KoPa WiFi Lab	

Accessories

Power adapter and power cord
(Optional Chinese, American, European, Australian, Korean, British standard etc.)



USB mouse
and keyboard

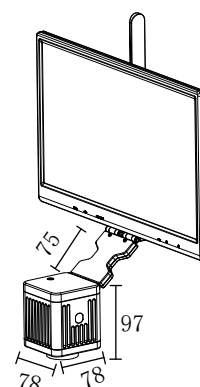
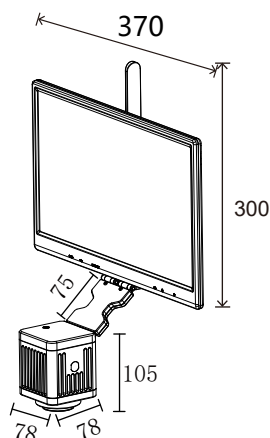


Dimensions(Unit:mm)

Net weight ≈2kg

Camera with 0.43X adapter

Camera with C-mount



Solution② Smart Camera

Build a PC-free Imaging System for Your Microscope



Features & Benefits

5G WiFi and DP are simultaneous outputs



5G WiFi output

Compatible with various devices and operating systems, including Windows, iOS, and Android. Mobile devices can access the system by scanning a QR code. connects to PC via WiFi.



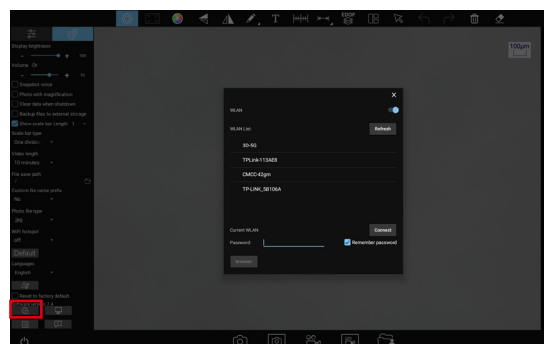
DP output

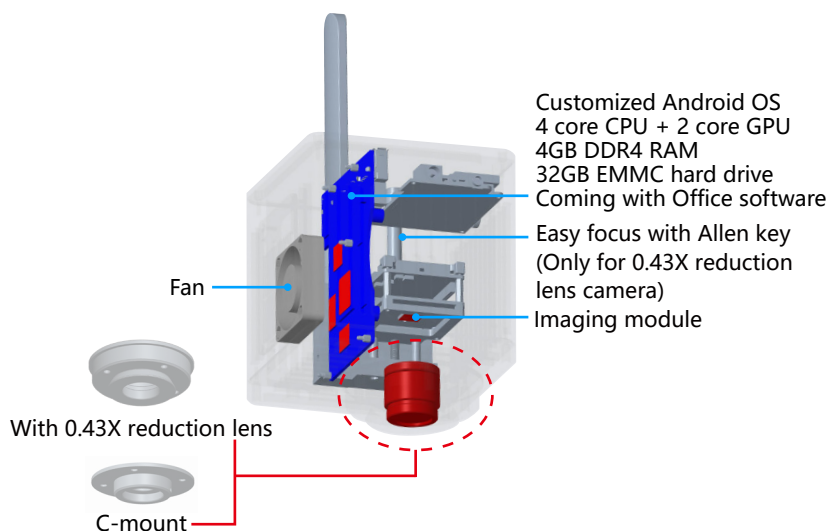
With DP output for display on monitors, TVs and projectors.



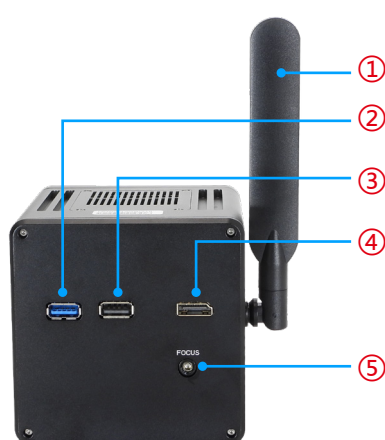
Connecting to the Internet

The camera supports wireless Internet connection (only supports 5G WiFi router signal), by entering the password of any 5G WiFi network, you can directly open the browser to access the Internet. This will allow you to take advantage of online features and functionalities directly from your camera.





- Built-in operating system Android processor RK3399, MS office suit(Word,Excel, Power-point) are preinstalled, no need computer.
- Comes with an imaging app that displays live images upon startup.
- Includes a high-power 0.43X reduction lens for a wide field of view.
- 32GB built-in RAM with support for external U-disk storage for pictures and videos.
- USB interface allows for easy connection of keyboards and mouse.



①	5G WiFi antenna	The omnidirectional antenna provides a broad signal coverage, ensuring connectivity across a wide area. Its design supports up to 7 simultaneous connections, accommodating a variety of mobile devices including smart-phones, tablets, and laptops.
②	USB 3.0 interface	Can be connected to a mouse, keyboard, USB flash drive (for copying videos and images).Or you can use the manufacturer's optional USB to DC5V power cord to power the Ei and Si.
③	USB 2.0 interface	
④	DP output interface	Transmission via DP cable, connected to a display device.
⑤	Easy focus with allen key (Only for 0.43X reduction lens camera)	Simple and precise focus adjustment for synchronization between eyepiece and monitor.
⑥	Power input	DC 12V 3A
⑦	Headphone and microphone ports	Connect with headset cable for audio output.
⑧	Power switch	Switch on/off.

Specifications

Applicable to	Nikon	Nikon
Models	TE2000	TE2000
C-mount category	C-C-12	C-C-20
With 0.43X reduction lens category	C-N-12	C-N-20
Physical resolution	12.0MP	20.0MP
Image sensor	SONY IMX412 CMOS	SONY IMX147 CMOS
Exposure mode	Rolling Shutter	Rolling Shutter
Maximum resolution	4000×3000 (12,000,000Pixels)	5184×3888 (20,155,392 Pixels)
ISO sensitivity	Equivalent to 100-12800	Equivalent to 100-12800
Sensor size	1/2.3"	1/2.3"
Pixel size	1.55μm×1.55μm	1.2μm×1.2μm
Spectral response	380-650nm	380-650nm
Exposure capability	Real-time auto and manual adjustment	Real-time auto and manual adjustment
Exposure time	10μs-333ms	10μs-333ms
White balance	Real-time auto and manual RB adjustment	Real-time auto and manual RB adjustment
Preview resolution	4000×3000@30fps,3840×2160@30fps	5184×3888@10fps,3840×2160@15fps
Power supply	DC 12V 3A	DC 12V 3A
Wireless protocol	5G WiFi IEEE802.11ac	5G WiFi IEEE802.11ac
A/D conversion bit depth	12bit	12bit
Software and App	Windows Software:KoPa Capture Pro,Embedded software:KoPa WiFi Lab AO,App:KoPa WiFi Lab	

Accessories

Power adapter and power cord
(Optional Chinese, American, European, Australian, Korean, British standard etc.)



DP cable

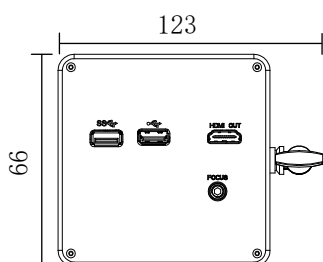


USB mouse
and keyboard

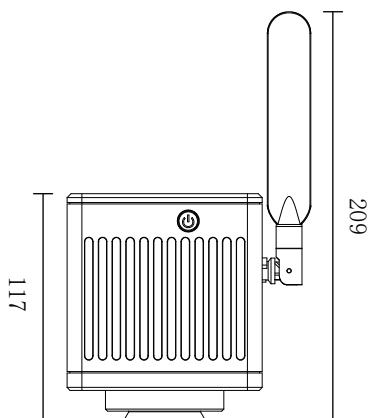


Dimensions(Unit:mm)

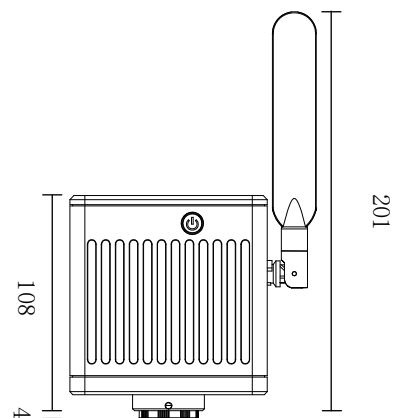
Net weight ≈1.3kg



Camera with 0.43X adapter



Camera with C-mount



Solution③ WiFi Embedded Camera

Embedded and Multiple Outputs,Seamlessly Fits to Your Microscope



Features & Benefits



5G WiFi output

Compatible with various devices and operating systems, including Windows, iOS, and Android. Mobile devices can access the system by scanning a QR code. Allows to connect to PC via WiFi



HDMI output

With HDMI output for display on monitors, TVs and projectors.



No software, only live images are available, at which point the camera image properties can be controlled via WiFi or USB.



USB output

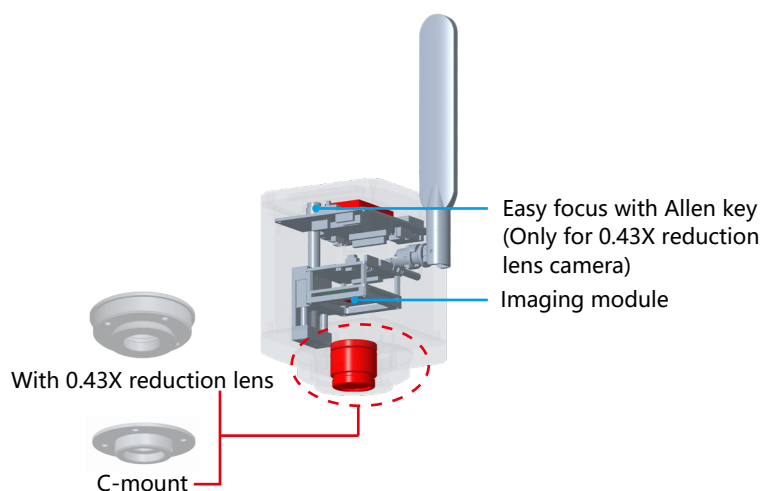
Supports connection to a computer via USB 2.0. You can utilize the KoPa Capture Pro software or any standard UVC 2.0 protocol software to access the camera's real-time images without the need for driver installation.



Network output

Connect the camera to the router or switch through the network cable, up to 13 units computers, mobile phones and tablets in the LAN can access and control the images as long as they have installed the software and APP.





①	HDMI output interface (only 12.0MP camera)	The display device is connected and the image can be displayed, but the image cannot be controlled.
②	Network output interface	When WiFi is in gear: connect to a router or switch to access a LAN so that Windows computers, smartphones, and tablets on the LAN can share the microscopic screen; or connect to the Internet directly.
③	USB output/ power supply	Two in one: data transmission and power supply.
④	5G WiFi antenna	The omnidirectional antenna provides a broad signal coverage, ensuring connectivity across a wide area. Its design supports up to 7 simultaneous connections, accommodating a variety of mobile devices including smartphones, tablets, and laptops.
⑤	Easy focus with allen key (Only for 0.43X reduction lens camera)	Simple and precise focus adjustment for synchronization between eyepiece and monitor.
⑥	USB/OFF/Network working mode switching	Two working modes switching

Specifications

Applicable to	Nikon	Nikon
Models	CF48	CF48
C-mount category	B-C-12	B-C-20
With 0.43X reduction lens category	B-N-12	B-N-20
Physical resolution	12.0MP	20.0MP
Image sensor	SONY IMX412 CMOS	SONY IMX147 CMOS
Exposure mode	Rolling Shutter	Rolling Shutter
Maximum resolution	4000×3000 (12,000,000Pixels)	5184×3888 (20,155,392 Pixels)
ISO sensitivity	Equivalent to 100-12800	Equivalent to 100-12800
Sensor size	1/2.3"	1/2.3"
Pixel size	1.55μm×1.55μm	1.2μm×1.2μm
Spectral response	380-650nm	380-650nm
Exposure capability	Real-time auto and manual adjustment	Real-time auto and manual adjustment
Exposure time	10μs-333ms	10μs-333ms
White balance	Real-time auto and manual RB adjustment	Real-time auto and manual RB adjustment
Preview resolution	4000×3000@30fps, 3840×2160@30fps	5184×3888@10fps, 3840×2160@15fps
Power supply	DC 5V 3A	DC 5V 3A
Wireless protocol	5G WiFi IEEE802.11ac	5G WiFi IEEE802.11ac
A/D conversion bit depth	12bit	12bit
Software and App	Windows Software:KoPa Capture Pro, App:KoPa WiFi Lab	

Accessories

HDMI cable(optional, 2m only for 12.0MP camera)

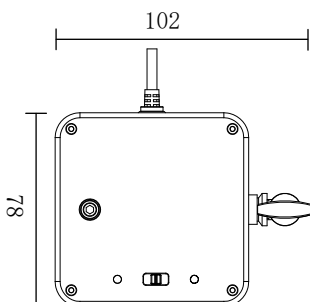


Gigabit ethernet cable (optional, 2m)

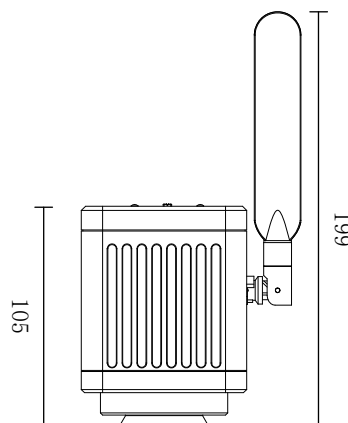


Dimensions(Unit:mm)

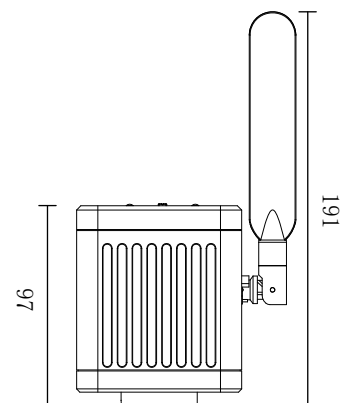
Net weight ≈1kg;



Camera with 0.43X adapter



Camera with C-mount





Shedding New Light On **MICROSCOPY**



Microscope objectives

Our objectives help you focus on yours

Nikon is a leader in the development and manufacture of optical and digital imaging technology for advanced science and clinical research. With over a 100-year history of optical excellence, Nikon is committed to accelerating innovation in science and clinical imaging to improve healthcare and provide a better quality of life.



Nikon's first microscope, released in 1925

The switch from traditional film photography to digital imaging was a major milestone in the field of microscopy, opening up new possibilities in both application and technology. Introduction of digital imaging spurred significant technological changes including the development of objectives with enhanced optical quality and functionality to meet the new demands. Objective lenses are arguably the most important element in the microscope and Nikon continues to invest heavily in the development of objectives to meet the changing demands of science. Explore some of Nikon's newest developments in high-performance objectives in this brochure.



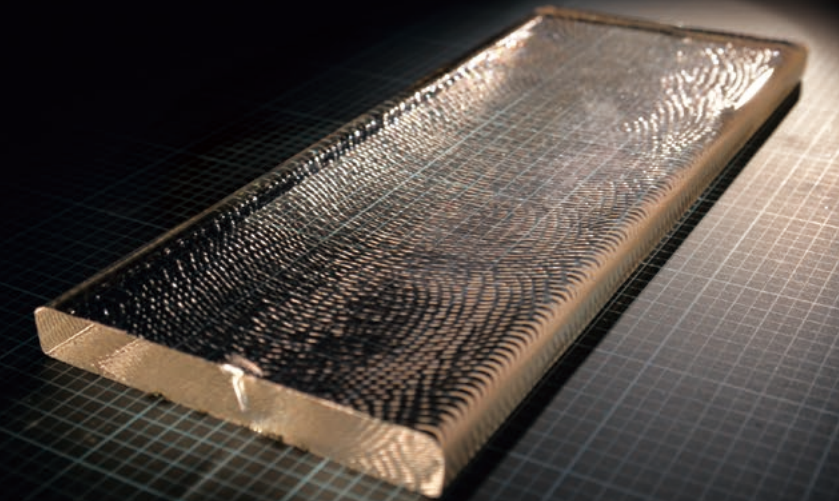
In tireless pursuit of the highest quality

Each Nikon microscope objective is precision-crafted to provide the highest level of clarity and overall optical performance. World-class Nikon objectives, including the renowned CFI60 infinity optical system, deliver brilliant images of breathtaking sharpness and clarity, from ultralow to the highest magnifications.

The initial melting process after blending glass raw materials

It Starts with the Glass

Nikon has been developing optical glass since its inception in 1917, and to this day, wholly owns and formulates all of its glass. Optical glass starts as an ingot (shown on right) which is formed by blending rare earth elements and repeated melting, shaping and slow cooling to achieve a target refractive index. The glass ingots are precision-cut, polished and coated to produce lens elements for the objective.



Mastering Excellence

The front lens of high-performance objectives is hand-polished by Nikon's most highly skilled experts (shown on left), a technique requiring more than a decade to master.

By controlling the entire manufacturing process from glass formulation to assembly and alignment of lens elements, Nikon ensures the highest quality and performance of its objectives.

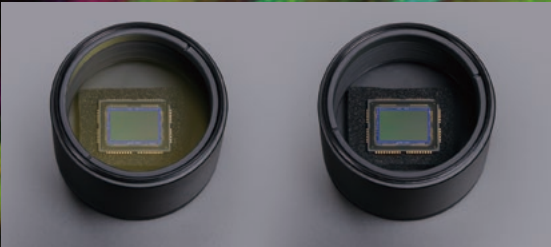


Objectives Inspired by Your Science

Produced to exacting standards, Nikon's objectives provide exceptional detail and clarity. The highest level of image quality can be achieved whether it be for routine tasks or cutting-edge research.

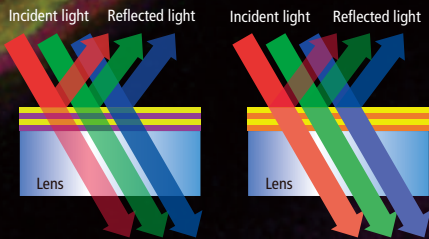
Anti-Reflective Nano Crystal Coat

Nano Crystal Coat is ultra-low refractive index thin film technology that applies a nanoparticle film used for the projection lens of Nikon's semiconductor manufacturing equipment. An extremely high antireflection effect is achieved by forming a low-density film with particles of a few nanometers to a dozen nanometers. It also lowers the reflection of vertically incident light compared to conventional antireflection film, achieves extremely high transmittance in a wide wavelength range, has an unprecedented effect with respect to ghosting and flares caused by obliquely incident light.



Conventional anti-reflection multilayer film

Nano Crystal Coat



Conventional multi-layer coating

Nano Crystal Coat

Cleared Tissue Imaging

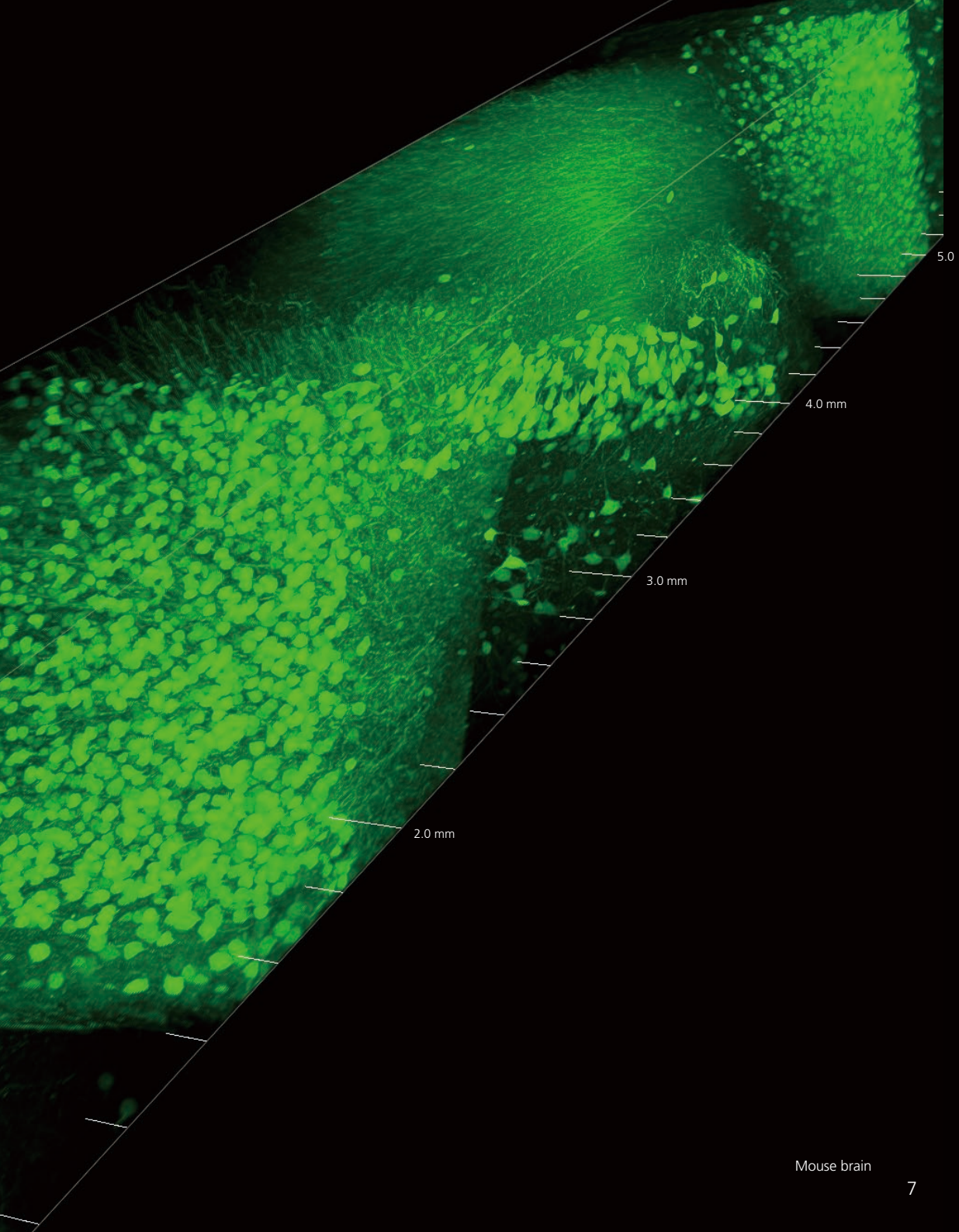


CFI90 20XC Glyc

Designed for deep imaging of cleared tissues

The unique CFI90 design results in an incredibly high N.A. while maintaining a large field of view and ultra-long working distance. Incorporates a correction collar for compensating for different refractive indices of clearing agents.

- NA: 1.00, WD: 8.20 mm
- Chromatic aberration correction from the visible to IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Mouse brain

Cleared Tissue Imaging



CFI Plan Apochromat 10XC Glyc

Compatible with a wide range of immersion media and clearing agents

In addition to water and immersion oil, this objective lens is compatible with a variety of tissue clearing agents. The lens also features chromatic aberration correction over a broad spectral range and is compatible with the Ti2 inverted microscope.

- NA: 0.50, WD: 5.50 mm (upright) / 2.00 mm (inverted)
- Chromatic aberration correction from the visible to IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Zebrafish larva

Multiphoton Imaging

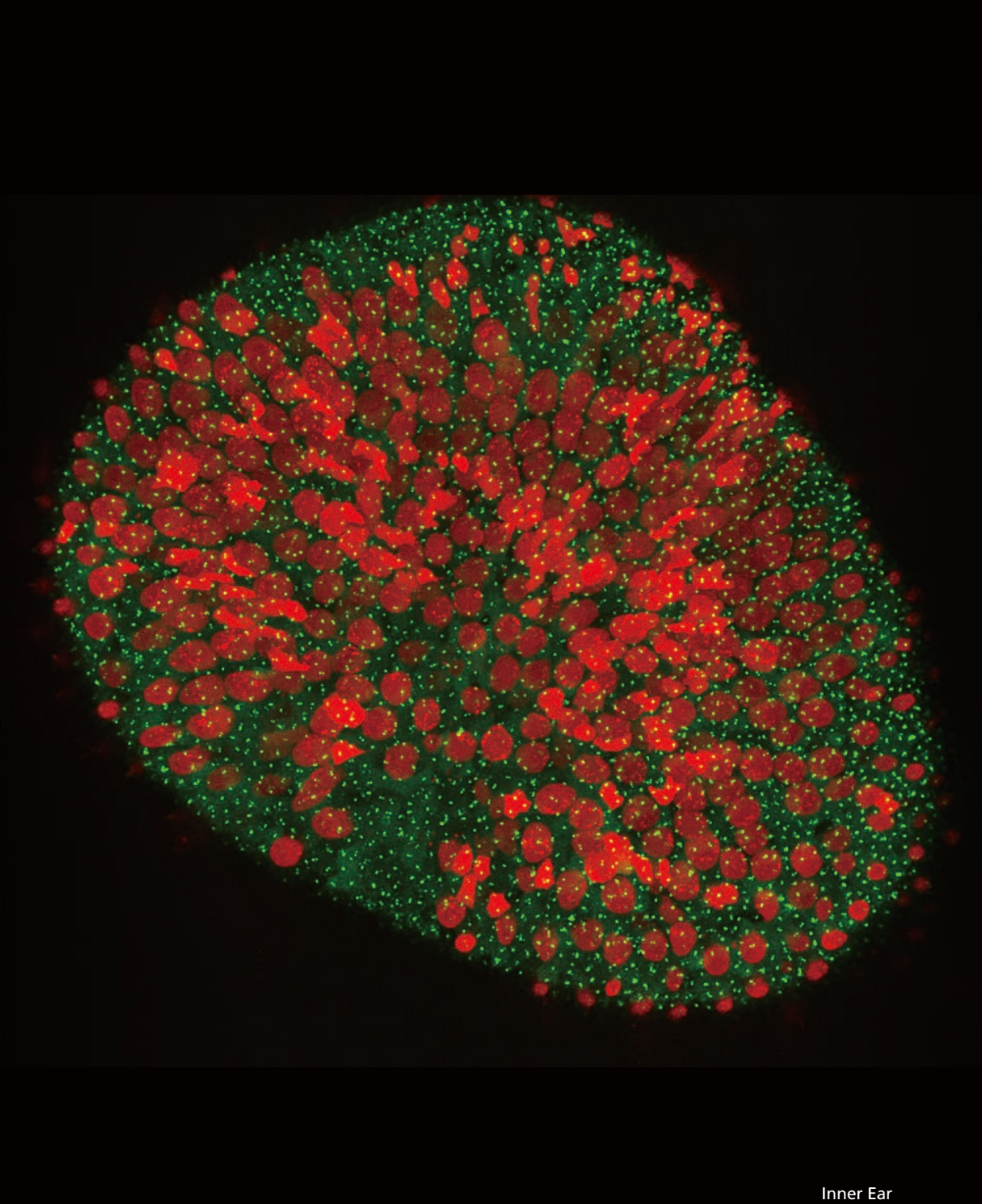


CFI75 Apochromat 25XC W 1300

Developed for deep brain applications

Best in class objective for multiphoton and electrophysiology applications. Offers ultra-long working distance and incredibly high N.A. for exceptional results every time.

- NA: 1.10, WD: 2.00 mm
- Chromatic aberration correction from the visible to near IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Inner Ear

Multiphoton Imaging

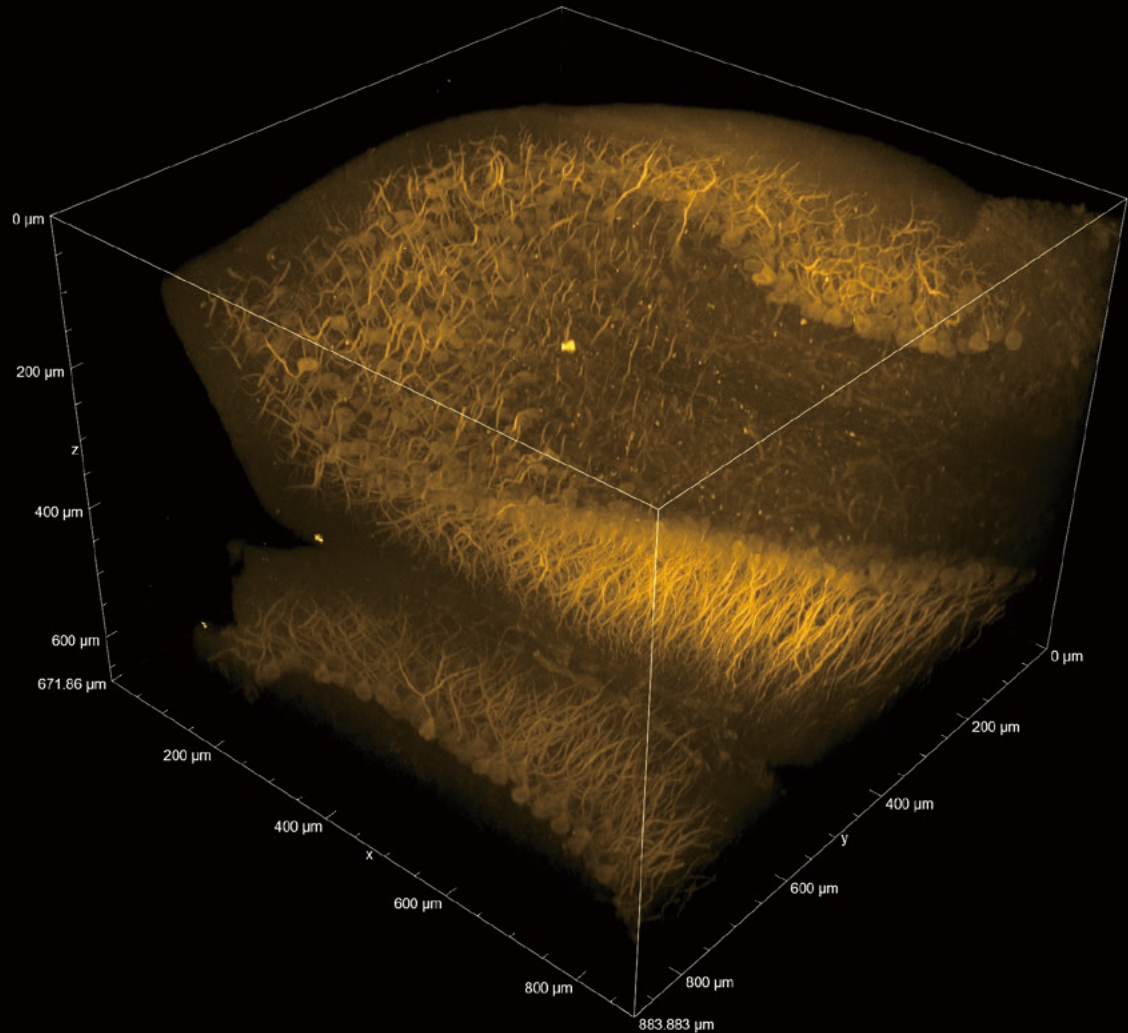


CFI75 Apochromat
LWD 20XC W

Objective for large FOV multiphoton
imaging

This objective can acquire bright multiphoton confocal images up to the edge of a large field of view of 22 mm. With a long working distance of 2.8 mm and a high numerical aperture of 1.00, it enables clear observation to deep within *in vivo* samples.

- NA: 1.00, WD: 2.8 mm
- Chromatic aberration correction from the visible to near IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Purkinje neuron in LC3GFP mouse cerebellum

Confocal Imaging

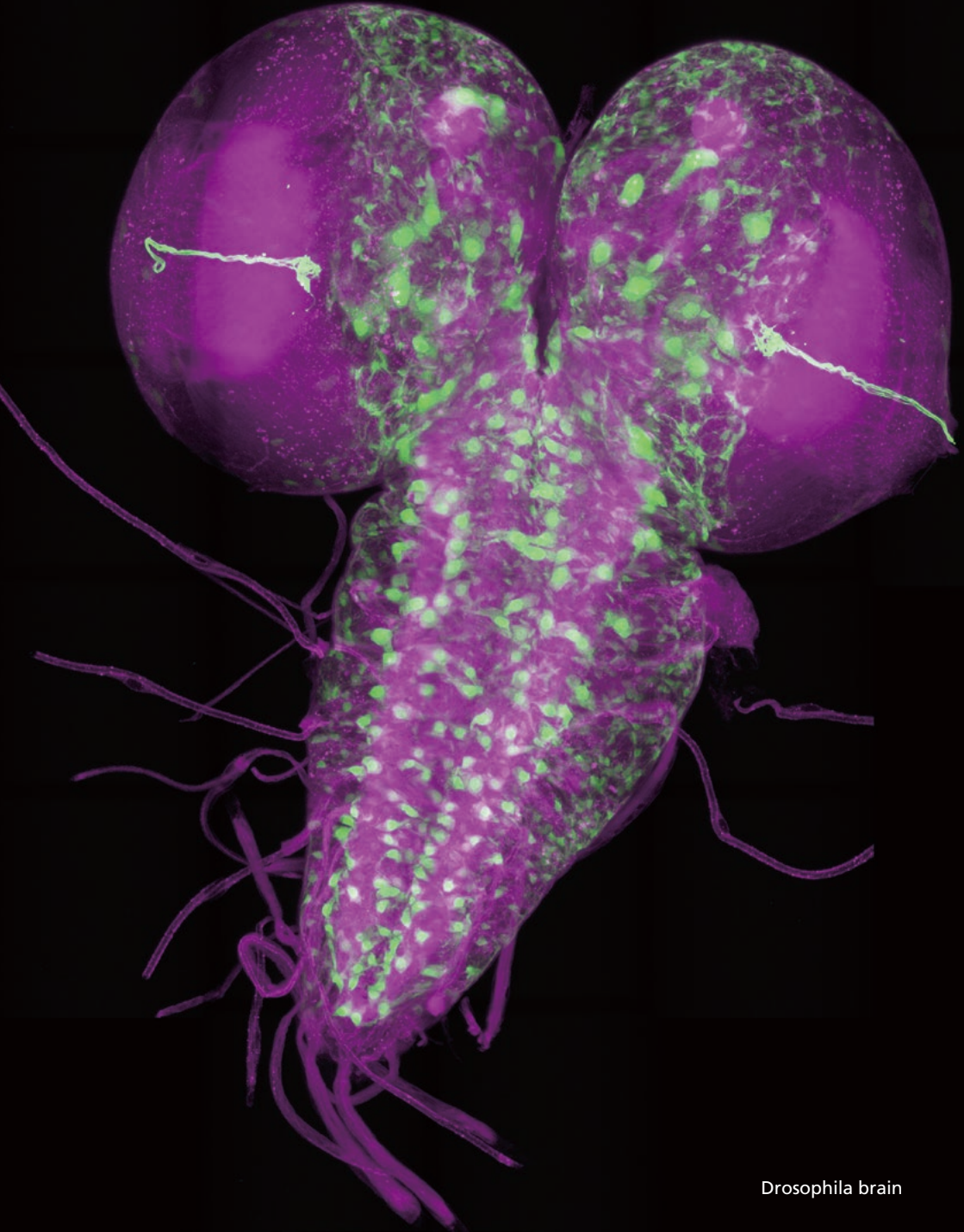


CFI Apochromat LWD
Lambda S 20XC WI

A versatile objective for a wide range
of applications

Combines high N.A., long working distance and large field of view for imaging thick, live samples. Chromatic aberration correction from visible to IR for multiphoton imaging as well.

- NA: 0.95, WD: 0.95 mm
- Chromatic aberration correction from the visible to IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Drosophila brain

Image courtesy of: Dr. L. Dubreil, Dr. J. Pichon and Pr MA Colle, CENN at PAnTher UMR703 INRAE/Oniris, Nantes France

Confocal Imaging



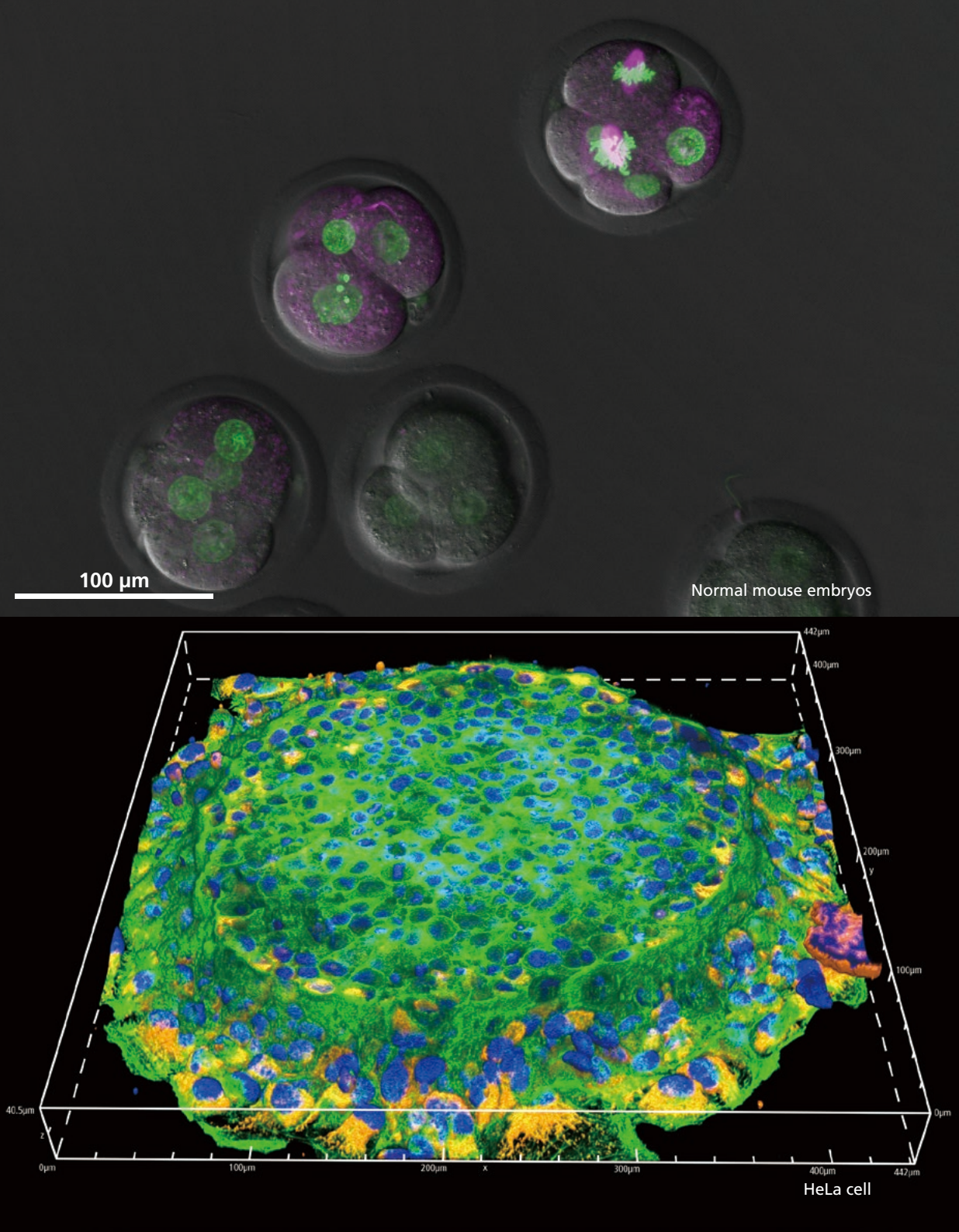
CFI Plan Apochromat
Lambda S 25XC/40XC Sil

High-resolution objectives for observing
thick specimens

Silicone oil closely matches the refractive index of live cells, thereby minimizing spherical aberration and providing brighter, higher-resolution images. Unlike water, silicone oil demonstrates minimal evaporation at 37°C, thereby enabling extended, long-term time-lapse imaging experiments.

- NA: 1.05 (25XC)/1.25 (40XC),
WD: 0.55 mm (25XC)/0.30 mm (40XC)
- Chromatic aberration correction in the visible range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction

Image of mouse embryo courtesy of: Dr. Yoshiteru Kai, Shonan Yume Clinic, Yamashita



Confocal Imaging



CFI Plan Apochromat IR
60XC WI

Incredible resolution and field flatness

This objective provides an NA of 1.27, the highest among 60X water immersion objectives, and achieves incredible field flatness. Corrects for chromatic aberration over a wide wavelength range up to IR, and supports various applications including multicolor live-cell confocal imaging, multiphoton imaging and laser tweezer applications.

- NA: 1.27, WD: 0.17 mm
- Chromatic aberration correction from the visible to IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Super-Resolution Imaging

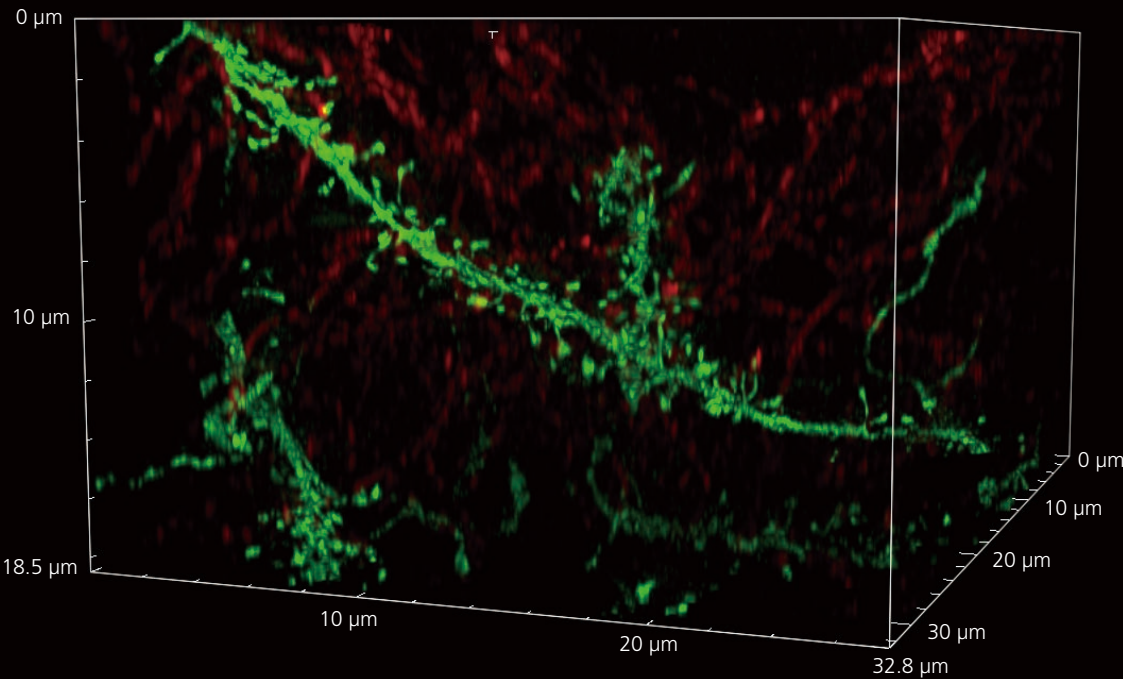


CFI SR HP Plan
Apochromat Lambda S
100XC Sil

High-resolution silicone oil immersion
objective for imaging live samples

Silicone oil more closely matches the refractive index of live cells compared to water or oil, thereby minimizing spherical aberration issues common to live cell imaging. In addition, the 100XC Sil lens achieves exceptional resolving power even at greater depths, making it well-suited for super-resolution imaging of thicker specimen.

- NA: 1.35, WD: 0.30 mm
- Chromatic aberration correction in the visible range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Dendrites

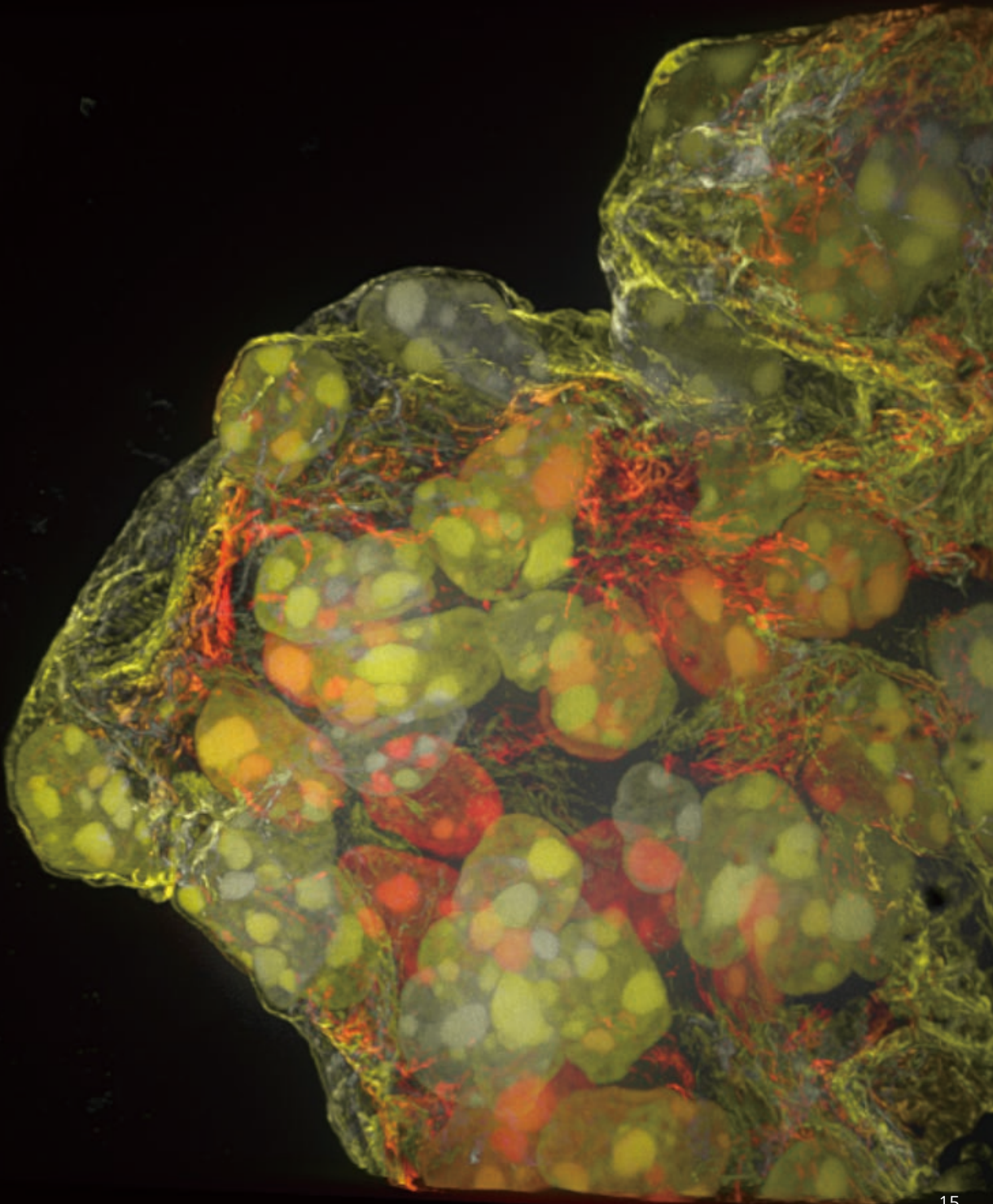
Super-Resolution Imaging



Auto Correction Collar

Quick and accurate spherical aberration
correction

Achieving the highest quality point spread function is critical for super-resolution imaging. The ACC quickly moves lens elements in the objective to an optimal position based on the acquired point spread function to minimize spherical aberration.



High-Content Imaging

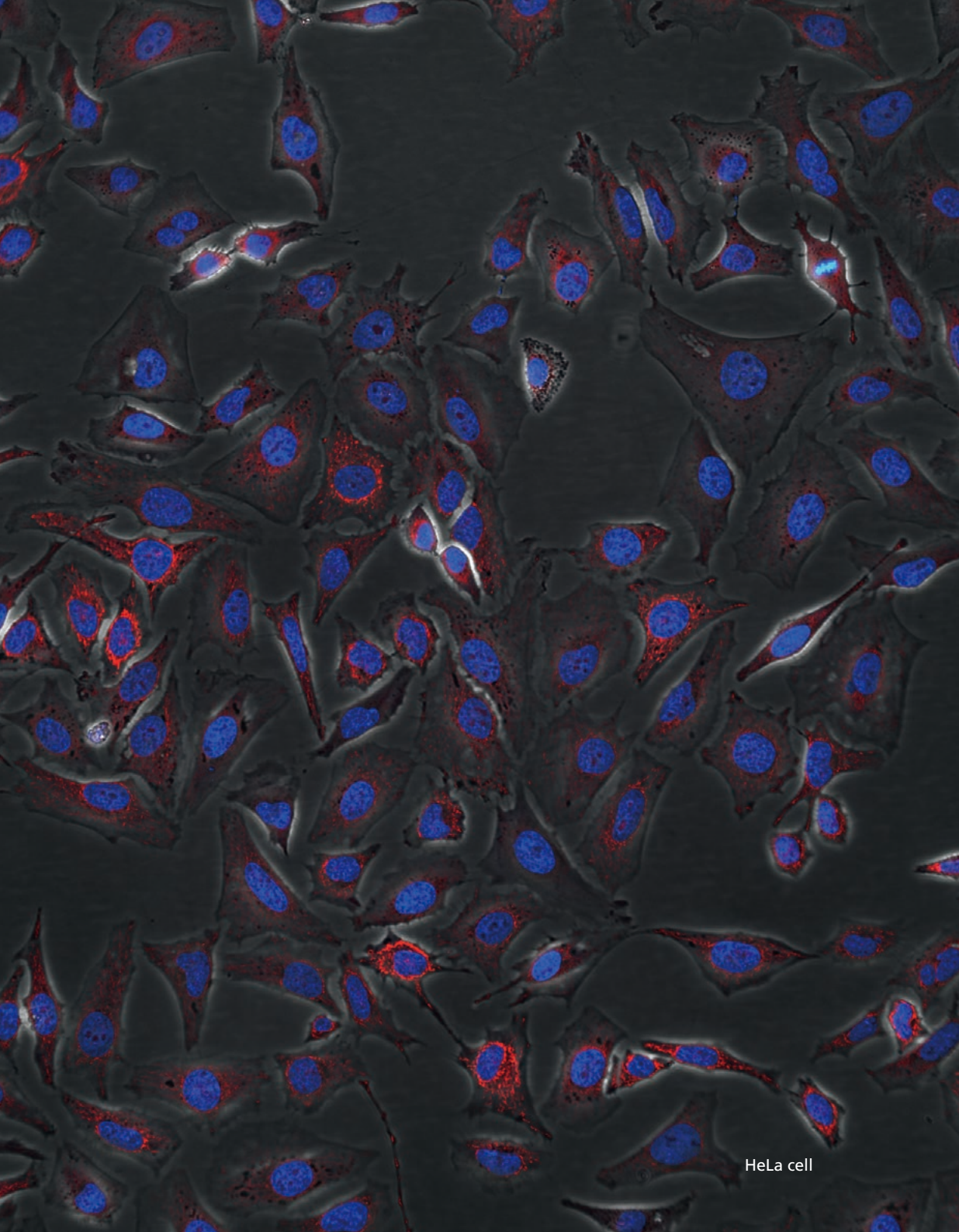


CFI S Plan Fluor LWD
ADM 20XC

High NA and long WD objective designed for HC applications

This objective is compatible with thick plastic-bottom dishes and well-plates, and enables high-resolution phase-contrast and fluorescence observations. Its large FOV improves throughput of high-content applications.

- NA: 0.70, WD: 2.30-1.30 mm
- Chromatic aberration correction in the visible range
- Correction collar for spherical aberration correction



HeLa cell

Pathological Examination

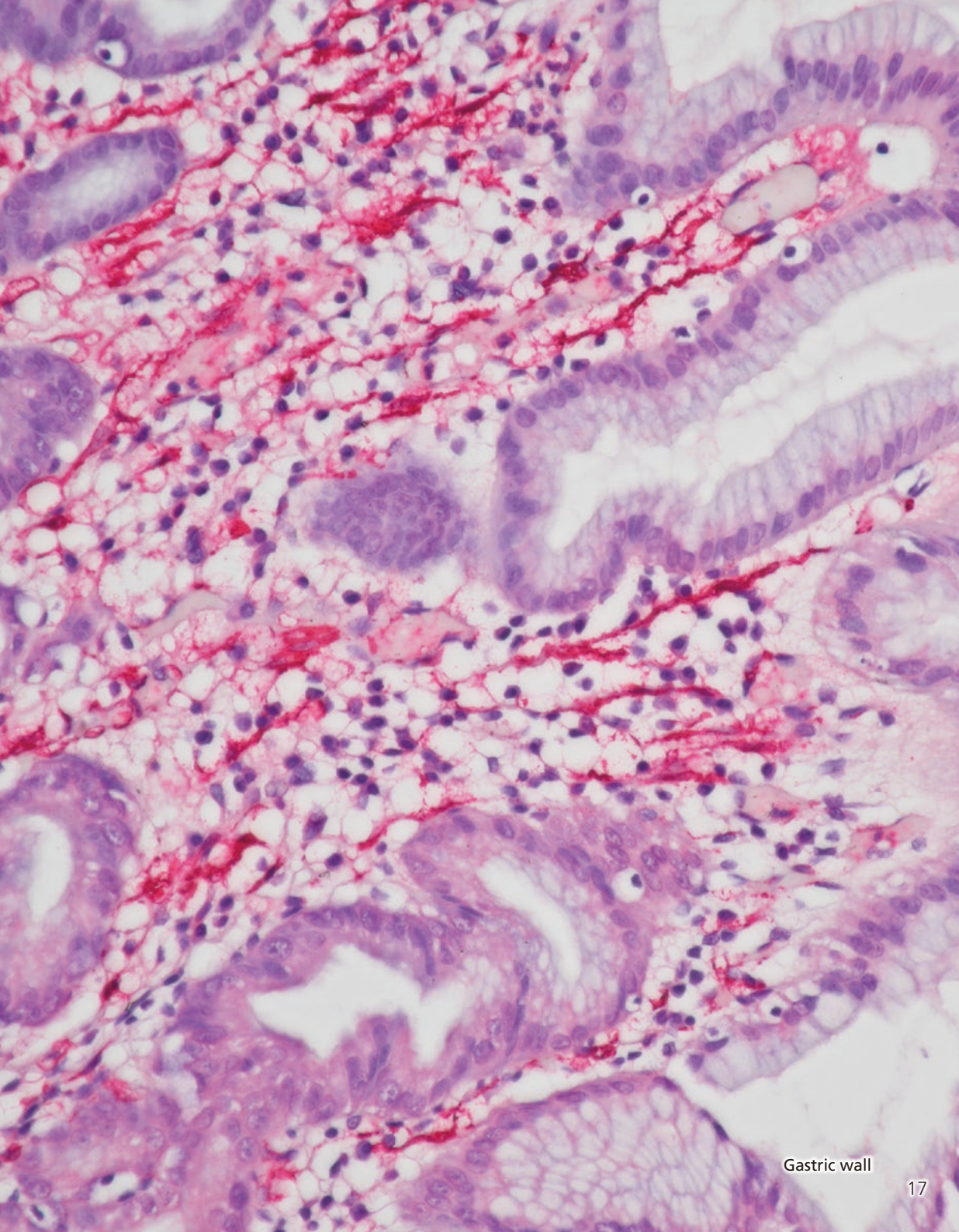


CFI Plan Apochromat
Lambda D 40XC

Large field-of-view imaging with uniform brightness

This objective achieves uniform brightness up to the edge of the field of view, chromatic aberration correction from 405 nm upward, and improved resolution. The 25 mm field of view allows you to capture images of a large area of the sample, improving throughput.

- NA: 0.95, WD: 0.21 mm
- Chromatic aberration correction from the visible to near IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



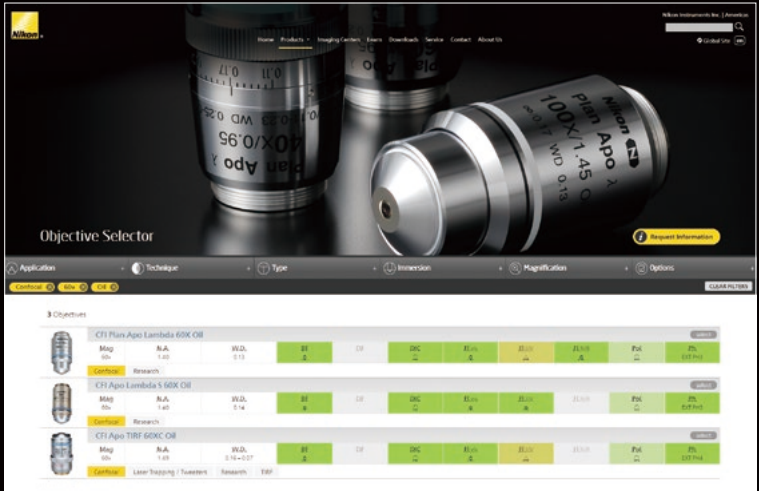
Gastric wall

Image courtesy of: Nichirei Biosciences Inc.

A tool for finding the right objective

Nikon's online Objective Selector tool enables you to quickly and easily find the right objective for your application. Refine your search based on application, technique, objective class, immersion type, etc. Specifications for multiple objectives can be displayed in a single window for easy comparison.

<https://www.microscope.healthcare.nikon.com/selectors/objectives>



OBJECTIVE SELECTOR



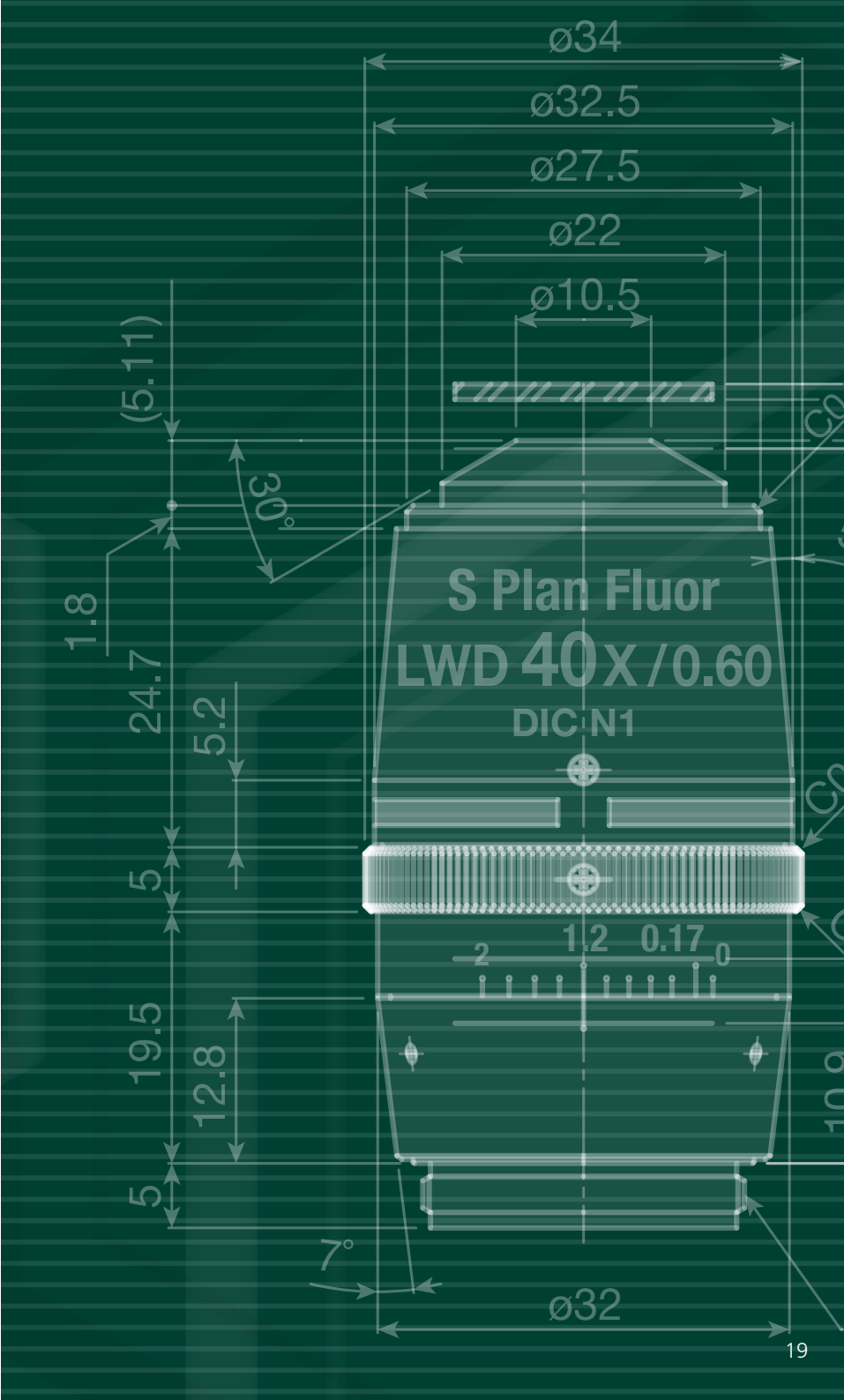
For OEM and DIY

With over 100 years of experience in developing optical technology, Nikon offers a wide range of components that can fulfill almost any optical requirement.

Nikon develops products to the highest standards, from design to manufacture, to ensure we meet the needs of a wide variety of customers.

For detailed specifications including dimensions and transmission information, please refer to the following website.

<https://www.microscope.healthcare.nikon.com/products/oem>



As individual as you

Nikon offers a broad portfolio of objectives to meet your individual application needs. Explore some of the different objective series in the following pages.



CFI Plan Apochromat Lambda D series

Outstanding image flatness and high resolution provide uniform image quality up to the edge of a large field of view of 25 mm, improving efficiency in image tiling and high content screening. Chromatic aberration has been corrected over a wide wavelength range from 405 nm to 850 nm, enabling highly accurate multicolor imaging.



CFI Plan Apochromat Lambda D 2X, 4X, 10X, 20X, 40XC, 60X Oil and 100X Oil

Silicone immersion objectives

Silicone oil closely matches the refractive index (RI) of living cells and tissues, allowing deep observations with minimal optical aberrations. Silicone immersion objectives enable clear observation with a high signal-to-noise ratio deep into living tissue, and facilitate ease of observation with their large fields of view, high resolution, and evaporation-resistant oil.



CFI Plan Apochromat Lambda S 25XC Sil, CFI Plan Apochromat Lambda S 40XC Sil, CFI Plan Apochromat Lambda S 60XC Sil

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
											UV	Visible light	NIR	
Brightfield (CFI Plan Apo)	Lambda D 2X	0.10	8.50	0/0.17		⊙					⊙ CF	⊙	⊙	●
	Lambda D 4X	0.20	20.00	0/0.17		⊙					⊙	⊙	⊙	●
	Lambda D 10X	0.45	4.00	0.17		⊙	△	⊙		●	⊙	⊙	⊙	●
	Lambda D 20X	0.80	0.80	0.17	✓	⊙	●	⊙		●	⊙	⊙	⊙	●
	Lambda D 40XC	0.95	0.21	0.11-0.23	✓	⊙	●	⊙		●	⊙ CF	⊙	⊙	●
	Lambda D 60X Oil	1.42	0.15	0.17	✓	⊙		⊙	EXT PH3-60x	●	⊙	⊙	⊙	●
	Lambda D 100X Oil	1.45	0.13	0.17	✓	⊙		⊙	EXT PH4-100x*	●	⊙	⊙	⊙	●
	Lambda S 25XC Sil	1.05	0.55	0.11-0.23		⊙	●	⊙			●	⊙		●
	Lambda S 40XC Sil	1.25	0.30	0.13-0.21 (23°C) 0.15-0.23 (37°C)		⊙	●	⊙			●	⊙		●
	Lambda S 60XC Sil	1.30	0.30	0.15-0.19		⊙		⊙			●	⊙	⊙	●
	IR 60XC WI	1.27	0.18-0.16	0.15-0.19	✓	⊙		⊙	EXT PH3-60x	○	●	○	⊙	●
	NCG 100X Oil	1.40	0.16	0	✓	⊙		⊙		○	●	⊙		

* An optical path length difference correction block is required.

Glossary

C: with correction collar
Oil: oil immersion
WI: water immersion
W: water dipping
Mi: multi immersion
Glyc: glycerin immersion
Sil: silicone oil immersion

Cover glass thickness

— : can be used without cover glass
0: use without cover glass

Darkfield

Possible with the following
△ : universal condenser (dry) and darkfield ring
○ : above and darkfield condenser (dry)
● : darkfield condenser (oil)

Phase rings

PHL, PH1, PH2, PH3: condenser cassette modules.
EXT PH3, EXT PH4: external phase contrast modules for Ti2-E.

Fluorescence (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 down to 340 nm
CF: confocal imaging is possible at 488 nm and above

Brightfield/DIC/Polarizing/Fluorescence (visible light)

● : possible but not recommended
○ : suitable
⊙ : recommended for best results

Ti2-E PFS

● : compatible with PFS

CFI Plan Apochromat VC

With its high degree of chromatic aberration correction and exceptional resolving power, the CFI Plan Apochromat VC 60XC WI is the perfect choice for multi-color fluorescence imaging as well as brightfield and DIC applications. In particular, axial chromatic aberration has been corrected in the short wavelength range, making this objective highly effective for confocal applications.



CFI Plan Apochromat VC 60XC WI

CFI SR series/CFI HP series/CFI SR HP series

Strict adjustment and inspection minimize the SR objective's asymmetric aberration, optimizing it for super-resolution microscopy. The HP objective has improved axial chromatic aberration correction and is compatible with the high-power lasers required for the fast blinks of fluorophores under super-resolution microscopy. The SR HP objective offers both excellent optical performance and high durability against high power laser excitation. AC objectives support the Auto Correction function of the Ti2-E inverted microscope.



CFI SR Plan Apochromat IR 60XC WI, CFI HP Plan Apochromat VC 100X Oil, CFI SR HP Apochromat TIRF 100XC Oil and CFI SR HP Plan Apochromat Lambda S 100XC Sil

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
											UV	Visible light	NR	
Brightfield (CFI Plan Apo)	VC 60XC WI	1.20	0.31-0.28	0.15-0.18	✓	⊙		○	EXT PH3-60X	○	⊙	⊙		●
Super-resolution (CFI SR Plan Apo)	IR 60XC WI	1.27	0.18-0.16	0.15-0.19		⊙		○	EXT PH3-60X	○	○	⊙	⊙	●
	IR 60XAC WI	1.27	0.18-0.16	0.15-0.19		⊙		○	EXT PH3-60X	○	○	⊙	⊙	●
Super-resolution (CFI HP Plan Apo)	VC 100X Oil	1.40	0.13	0.17	✓	⊙		○	EXT PH3-100X	○	●	⊙		●
Super-resolution (CFI SR HP Plan Apo)	Lambda S 100XC Sil	1.35	0.31-0.29 (23°C) 0.30-0.28 (37°C)	0.15-0.19		⊙		○		○	⊙	⊙		●
Super-resolution (CFI SR HP Apo)	TIRF 100XC Oil	1.49	0.16-0.10 (23°C) 0.15-0.09 (37°C)	0.13-0.19 (23°C) 0.14-0.20 (37°C)		⊙		○	EXT PH4-100X	○	●	⊙		●
	TIRF 100XAC Oil	1.49	0.16-0.10 (23°C) 0.15-0.09 (37°C)	0.13-0.19 (23°C) 0.14-0.20 (37°C)		⊙		○	EXT PH4-100X	○	●	⊙		●

CFI Apochromat Lambda S series

These high-numerical-aperture (NA) objectives provide chromatic aberration correction over wavelengths ranging from violet to near-infrared and are ideal for multicolor confocal imaging. The LWD Lambda S 20XC WI lens has a chromatic aberration correction range up to infrared. The transmittance of these lenses is enhanced over a wide wavelength range by utilizing Nano Crystal Coat technology.



CFI Apochromat Lambda S 40XC WI and CFI Apochromat LWD Lambda S 20XC WI/40XC WI

CFI Apochromat TIRF series

These objectives boast an unprecedented NA of 1.49 (using a standard coverslip and immersion oil),the highest resolution among Nikon objectives. Correction collars enable optimization of point spread functions for varying imaging temperatures, correcting spherical aberration when imaging at 23 and 37 degrees Celsius.



CFI Apochromat TIRF 60XC Oil and 100XC Oil

Multiphoton confocal objectives

These objectives are optimized for deep tissue imaging using a multiphoton confocal microscope, thanks to their ability to correct chromatic aberration up to near-IR range. They provide both long WD and high NA, as well as high transmittance. The Glyc models have a correction collar for the refraction index of immersion liquids, and are compatible with various tissue clearing reagents that are used in neuroscience research.



CFI Plan Apochromat 10XC Glyc, CFI90 20XC Glyc, CFI75 Apochromat LWD 20XC W and 25XC W 1300

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence			Ti2-E PFS
											UV	Visible light	NIR	
Confocal (CFI Apo)	LWD Lambda S 20XC WI	0.95	0.99-0.90	0.11-0.23		⊙	●	○		○		○	○	●
	LWD Lambda S 40XC WI	1.15	0.61-0.59	0.15-0.19		⊙	●	○	EXT PH3-40X	○	⊙	⊙		●
	Lambda S 40XC WI	1.25	0.20-0.16	0.15-0.19	✓	⊙		○	EXT PH3-40X	○	⊙	⊙		●
Evanescent (CFI Apo)	TIRF 60XC Oil	1.49	0.16-0.10 (23°C) 0.13-0.07 (37°C)	0.13-0.19 (23°C) 0.15-0.21 (37°C)		⊙		○	EXT PH4-60X	○	●	⊙		●
	TIRF 100XC Oil	1.49	0.16-0.10 (23°C) 0.15-0.09 (37°C)	0.13-0.19 (23°C) 0.14-0.20 (37°C)		⊙		○	EXT PH4-100X	○	●	⊙		●
Multiphoton confocal (CFI Plan Apo)	10XC Glyc	0.50	Upright: 5.50 Inverted: 2.00	0-0.17		⊙	○●					○	○	
Multiphoton confocal (CFI90)	20XC Glyc*	1.00	8.20	0		●***							⊙	
Multiphoton confocal (CFI75 Apo)	LWD 20XC W**	1.00	2.8	0-0.17		⊙					●	⊙	○	
	25XC W*	1.10	2.00	0		⊙	●	○****		○	○	⊙	○	
	25XC W 1300*	1.10	2.00	0		⊙	●	○****		○	○	⊙	○	

* Dedicated for FN1 and Ni-E focusing nosepiece type
** Dedicated for AX R MP multiphoton confocal system
*** Can only be used as a finder (chromatic aberration is corrected above 588 nm)
**** Also compatible with near-infrared DIC

CFI Plan Fluor series

Featuring a high transmission rate, especially in the ultraviolet wavelength, and flatness of field, this series is designed for fluorescence observation and imaging. These objectives can function as multi-purpose objectives for brightfield, fluorescence, simple polarizing, and DIC observations.



CFI Plan Fluor 4X, 10X, 20X, 40X, 60XC and 100X Oil



CFI Plan Fluor DLL 10X, 20X, 40X and 100X Oil

CFI Super Fluor series

This CFI Super Fluor series ensures an extra-high transmission rate of ultraviolet wavelengths down to 340nm for fluorochromes like indo-1 and fura-2. Also, these objectives have improved S/N ratios for short wavelengths and have high NA, making the fluorescence images they produce significantly sharper and brighter.



CFI Super Fluor 10X, 20X, 40XC and 40X Oil

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Ti2-E PFS
											UV	Visible light	
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	0.75	0.51-0.35 (oil) 0.51-0.34 (glycerin) 0.49-0.33 (water)	0-0.17	✓	⊙	○●	○		○	⊙	⊙	
	40X	0.75	0.66	0.17	✓	⊙	○●	○		○	⊙	⊙	●
	40X Oil	1.30	0.24	0.17	✓	⊙		○	EXT PH3-40X	○	⊙	⊙	●
	60XC	0.85	0.40-0.31	0.11-0.23	✓	⊙	●			○	⊙	⊙	
	60XS Oil	0.50-1.25	0.22	0.17	✓	⊙	○●	○	EXT PH3-60X	○	⊙	⊙	
	100X Oil	1.30	0.16	0.17	✓	⊙		○		○	⊙	⊙	●
	100XS 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	1.30	0.16	0.17	✓	○			⊙ 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	1.30	0.16	0.17	✓	○			⊙ PH3		○	○	●
Brightfield (CFI Super Fluor)	4X	0.20	15.50	—		⊙				●	⊙ 340	⊙	●
	10X	0.50	1.10	0.17	✓	⊙	○●	○		●	⊙ 340	⊙	●
	20X	0.75	1.00	0.17	✓	⊙	○●	○		●	⊙ 340	⊙	●
	40XC	0.90	0.34-0.26	0.11-0.23	✓	⊙	●	○		●	⊙ 340	⊙	
	40X Oil	1.30	0.19	0.17	✓	⊙		○		●	⊙ 340	⊙	●
	100XS Oil	0.50-1.30	0.20	0.17	✓	⊙	○●			●	⊙ 340	⊙	

CFI S Plan Fluor series

The broadband multilayer coating realizes high transmittance from ultraviolet to near-infrared wavelengths, with superior chromatic correction. The correction collar allows these objectives to be used with a diverse range of culture vessels and specimen thicknesses. High-quality images with no aberrations can be obtained under a broad range of illumination techniques.



CFI S Plan Fluor LWD 20XC and LWD ADM 20XC



CFI S Plan Fluor ELWD 20XC, 40XC and 60XC



CFI S Plan Fluor ELWD ADM 20XC, 40XC and ADL 60XC

Nikon Advanced Modulation Contrast (NAMC) series

Nikon has developed dedicated objectives for advanced modulation contrast. Colorless and transparent samples can be observed in high relief with a plastic dish, which is not possible in DIC observation. The direction of contrast can be matched to S Plan Fluor ELWD NAMC objectives, thereby allowing optimal contrast selection for techniques like microinjection and ICSI.



CFI S Plan Fluor ELWD NAMC 20XC and 40XC



CFI NAMC 10XF, CFI LWD NAMC 20XF and 40XC

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Ti2-E PFS
											UV	Visible light	
Brightfield (CFI S Plan Fluor)	LWD 20XC	0.70	2.30-1.30	0-1.80		⊙	○●	○		○	⊙	⊙	●
	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		⊙	○●	○		○	⊙	⊙	
	LWD ADM 20XC	0.70	2.30-1.30	0-1.80		○	○●		⊙ PH2		○	○	●
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		○	○	
	LWD NAMC 20XC	0.45	8.20-6.90	0-2.00		○					○	○	
Advanced modulation contrast (CFI S Plan Fluor)	ELWD NAMC 40XC	0.60	3.60-2.80	0-2.00		○					○	○	
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		○						●	

CFI Plan Achromat series

CFI Plan Achromat series provides incredible image flatness, with chromatic aberration corrected throughout the entire visible spectrum. These objectives are suitable not only for observation but also for capturing images.



CFI Plan 1X, 2X, 4X, 10X, 20X, 40X and 100X Oil



CFI Plan DL 10X, 20X, 40X and 100X Oil

Water Dipping Series

Sharper tips and broad approach angles provide improved accessibility for manipulator control. Aberrations are corrected even in the infrared range for high-magnification objectives, making them suitable for multi-photon imaging using infrared light.



CFI Plan Fluor 10XW, CFI75 LWD 16XW, CFI Apochromat NIR 40XW/60XW and CFI Plan 100XC W

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Near- infrared DIC
											UV	Visible light	
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	0.90	0.35/0.18	—/0.17	✓	⊙	●			●		○	
	100X Oil	1.25	0.20	0.17	✓	⊙				●		○	
	NCG 40X	0.65	0.48	0	✓	⊙	○●			●		○	
	NCG 100X	0.90	1.00	0	✓	⊙	●			●		○	
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	1.25	0.20	0.17	✓	○			⊙ PH3	●		●	
DIC (CFI Plan Fluor)	10X W	0.30	3.50	0		⊙	△	○		○	⊙	⊙	○
IR-DIC (CFI Apo)	NIR 40X W	0.80	3.50	0		⊙	●	○		○	●	⊙	○
	NIR 60X W	1.00	2.80	0		⊙	●	○		○		⊙	○
DIC (CFI Plan)	100XC W	1.10	2.50	0		⊙	●	○		○		⊙	○
DIC (CFI75)	LWD 16X W *	0.80	3.00	0		⊙	●	○		○	○	⊙	○

* Dedicated for FN1 and Ni-E focusing nosepiece type

CFI Achromat series

This series of objectives provide dramatic correction for chromatic aberration, spherical aberration and coma. Image flatness is significantly improved. Nikon specifically developed ADL series for phase contrast observations by using its proprietary apodization process to improve the objective's phase ring. Imaging cell division is often impeded by unwanted halos due to the sample thickness. ADL mitigates this effect for clearer observation of mitotic events.



CFI 4X and 10X, CFI LWD 20X, CFI 40X, CFI NCG 60X and CFI 100X Oil



CFI DL 10X, CFI LWD DL 20X, CFI DL 40X and 100X Oil



CFI ADL 10XF, CFI LWD ADL 20XF, 40XF and 40XC

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Ti2-E PFS
											UV	Visible light	
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	✓	⊙	●			●		⊙	
	NCG 60X	0.80	0.30	0.17	✓	⊙	○●			●		○	
	100X Oil	1.25	0.23	0.17	✓	⊙				●		○	
	100XS Oil	0.50-1.25	0.23	0.17	✓	⊙	○●			●		○	
	DL 10X	0.25	7.00	—		○	△		⊙ PH1	●		●	
Phase contrast (CFI)	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	1.25	0.23	0.17	✓	○			⊙ PH3	●		●	
	BM 10X	0.25	7.00	0.70		○			⊙ PH1	●		●	
	ADL 10XF	0.25	6.20	1.20		○			⊙ PH1	●		●	
	LWD ADL 20XF	0.40	3.10	1.20		○			⊙ PH1	●		●	
Apodized phase contrast (CFI)	LWD ADL 40XF	0.55	2.10	1.20		○			⊙ PH1	●		●	
	LWD ADL 40XC	0.55	2.70-1.70	0-2.00		○	○●		⊙ PH2	●		●	

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. July 2024
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Optics product page



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EU Declaration of Conformity

This European Declaration of Conformity is issued under the sole responsibility of the manufacturer.

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PRODUCT IDENTIFICATION		
Product / Trade Name	Product Code	Basic UDI-DI
ECLIPSE Si RS	MCA77200	4549921AA000MQ
Intended Purpose		
This microscope and accessories are optical instruments used to enlarge images of specimens, preparations, and cultures for medical purposes.		

IVDR RISK CLASS / STANDARDS / COMMON SPECIFICATIONS			
Device Classification		Standards	Common Specifications
Class	A	EN 61010-1:2010/A1:2019/AC:2019-04 EN 61010-2-101:2017 EN 62366-1:2015 EN 62304:2006 EN 62471:2008	N/A
Rule	5	EN 61326-1:2013 EN 61326-2-6:2013 EN IEC 63000:2018 EN ISO 14971:2012 EN ISO 13485:2016	

Nikon Corporation declares that the above-mentioned products meet the provision of the following EU legislation:

- In Vitro Diagnostic Medical Device Regulation (IVDR) (EU) 2017/746
- RoHS Directive (2011/65/EU, 2015/863/EU)

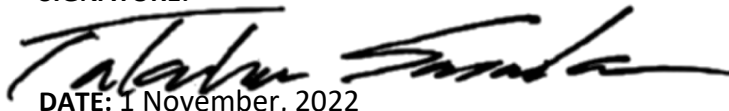
We, Nikon Europe B.V., Stroombaan 14, 1181 VX Amstelveen, The Netherlands, as the authorized representative, declare the conformity.

COMPANY REPRESENTATIVE: TAKAHARU SASAOKA

TITLE: Director & Executive Vice President
Healthcare Division Head

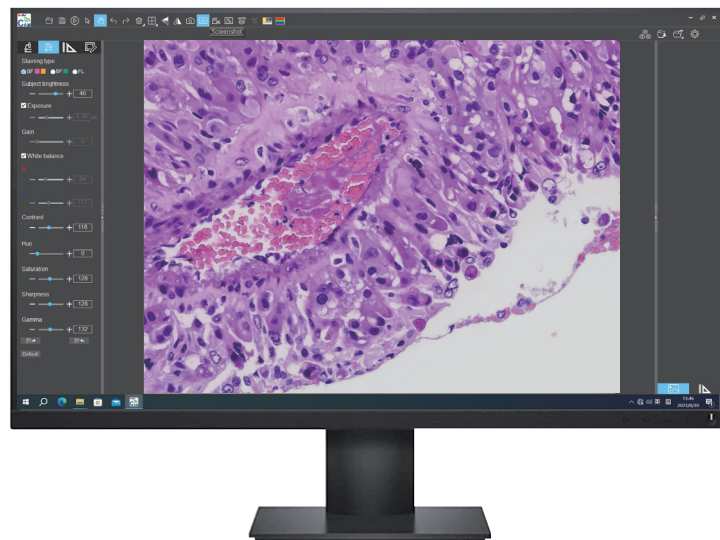
PLACE: AMSTELVEEN, THE NETHERLANDS

SIGNATURE:



DATE: 1 November, 2022

KoPa Capture Pro Software User Manual



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1.1 Environmental requirements for software installation

System requirements:

CPU type: i5 10th Generation or later version;

Memory capacity $\geq$ 16GB or more;

Hard drive capacity $\geq$ 512GB or more;

System: Genuine Microsoft Windows 10 (64 bit) or later version;

Graphics card: Core display or discrete graphics card.

Note: Some functions in the software require the computer with

Microsoft Word 2003 or later version (for output measurement results to Microsoft Word function)

Microsoft Excel 2003 or later version (for output measurement results to Microsoft Excel function)

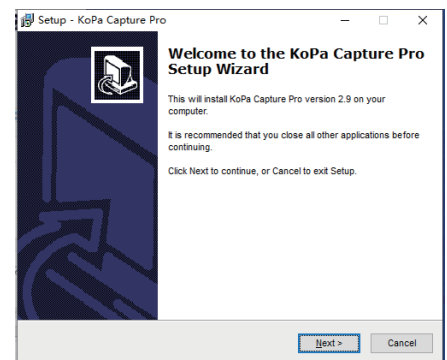
Microsoft Outlook 2003 or later version (for sending pictures via email function)

1.2 Installation steps

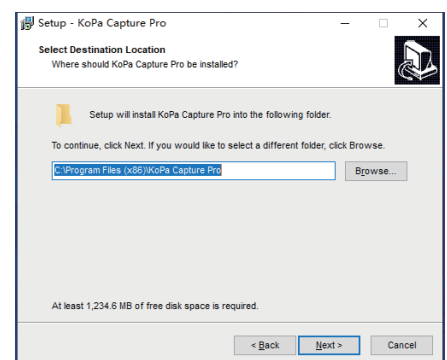
Step1.Run the file “KoPa Capture Pro Install ”. When window pops up, please select the installation guide language.

Note: The installation guide language is independent of the software interface language. If you need to change the software interface language, please select the "Language" function in the "Settings" menu to modify.

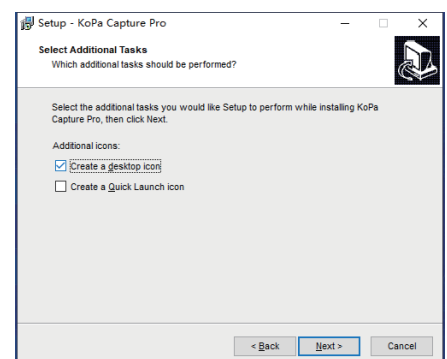
Step 2.When the window “Welcome to use KoPa Capture Pro Setup Wizard” pops up, please click the button “  ”.



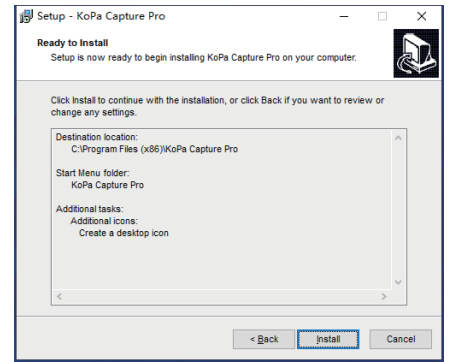
Step 3.When the window “Select Destination Location” pops up, click “Browse” to choose the file path for installation (usually default), and then click “  ” to continue.



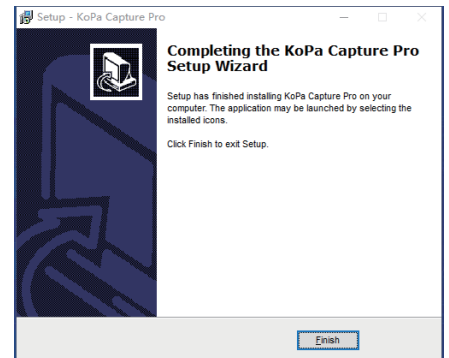
Step 4.When following window appears, select the shortcut you need, and then click the button “  ”.



Step 5. Confirm information like the “Destination Location” of software installation. After confirmation, please click the button “**Install**”.



Step 6. An installation progress bar will appear during the software installation procedure. The software installation necessitates the registration of some runtime libraries, which might be intercepted by some antivirus software. If such interception pops up, please allow the procedure to continue.

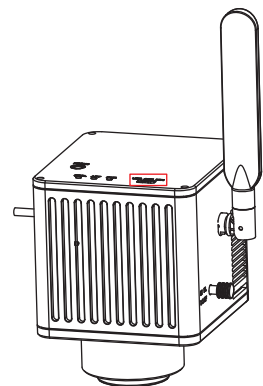
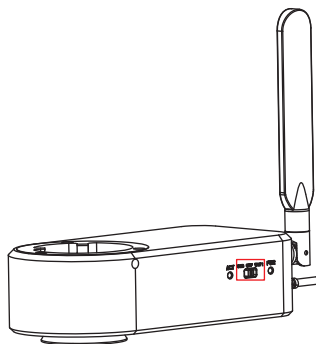
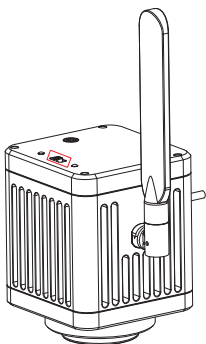
Step 7. An installation progress bar will appear during the software installation procedure. When the following window appears, the software has been installed successfully. Then click the button “**Finish**” to complete the installation. After closing the window, check the icon “

1.3 Software connection to the camera method

The software supports connection to the camera via USB, WiFi and network connections.

1.3.1 USB connection method

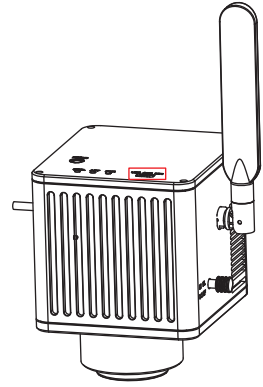
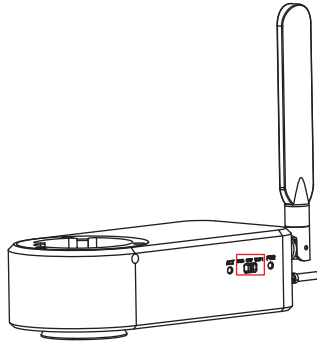
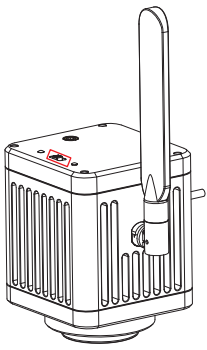
Just unplug the camera switch to USB gear and connect the camera USB cable to the PC's USB port.



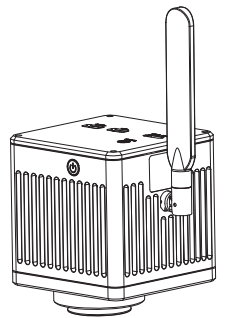
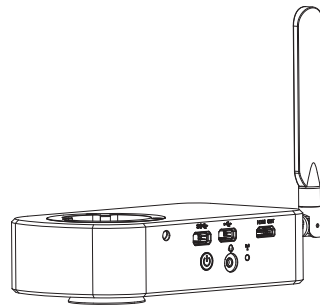
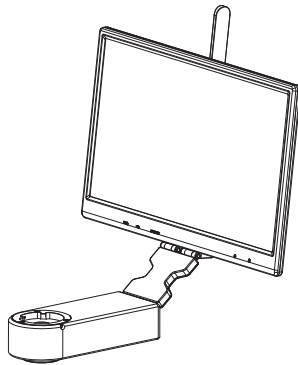
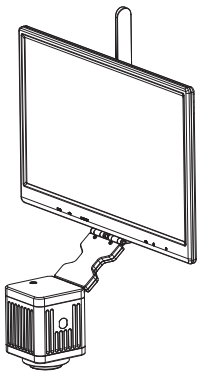
1.3.2 Wireless connection method (only valid for cameras with WiFi capability)

Step 1: Confirm that the computer supports the 5G WiFi IEEE 802.11ac protocol;

Step 2: WiFi embedded camera or WiFi camera, power on and switch to WiFi gear. As shown in the figure below:

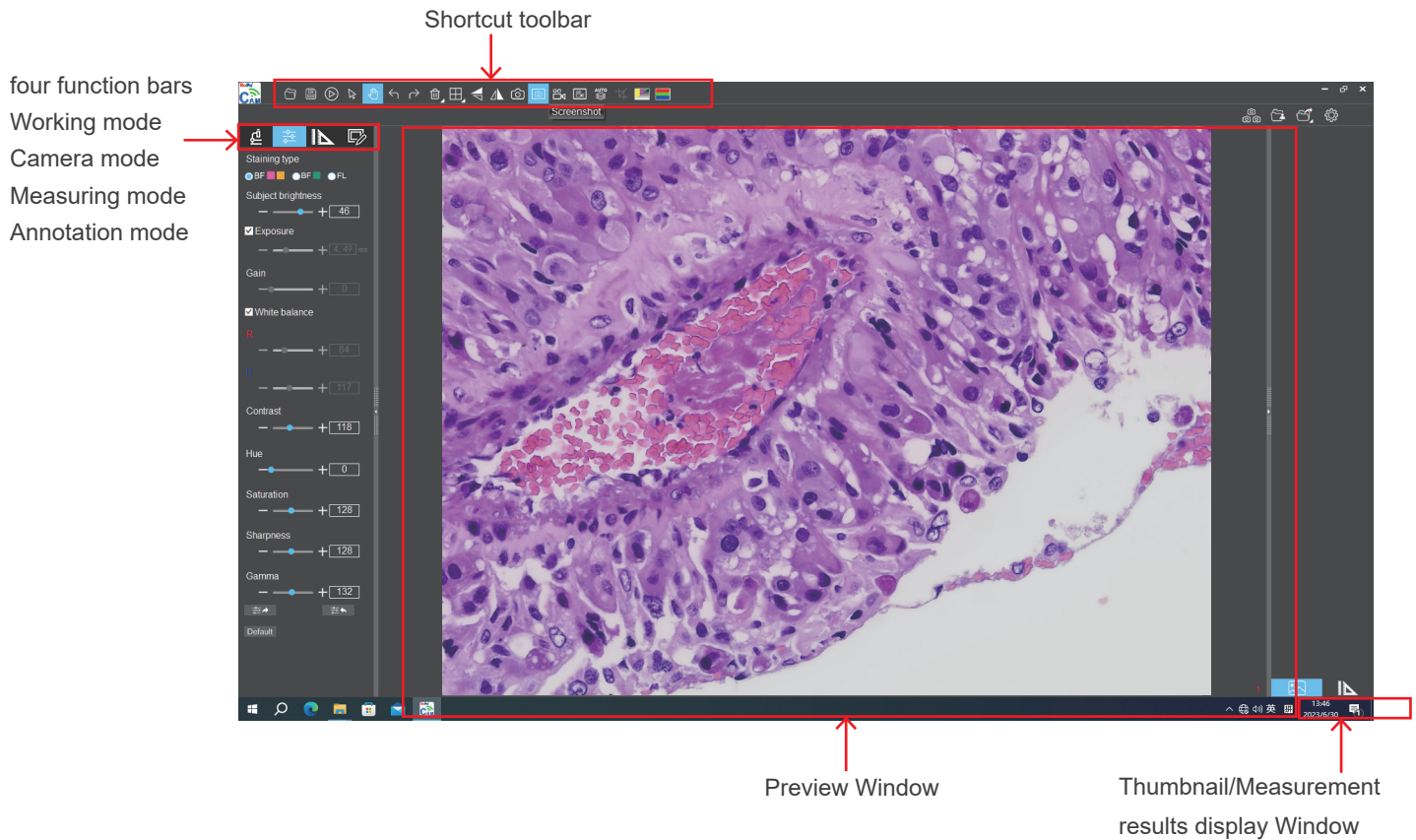


If you are using a smart embedded display camera, smart display camera, smart embedded camera, smart camera, you only need to turn on the power.



Step 3: After the WiFi camera is started, search for the camera's WiFi name WiFiCamera_5G_XXXXXX or WiFi5Camera_XXXXXX in the network connection, the default connection password is 12345678, the display shows "Connected" that is successfully connect-ed to the camera WiFi, start the software to get real-time images.

2.1 Operation interface

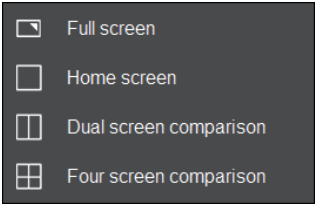


2.2 Shortcut toolbar

2.2.1 Shortcut tools

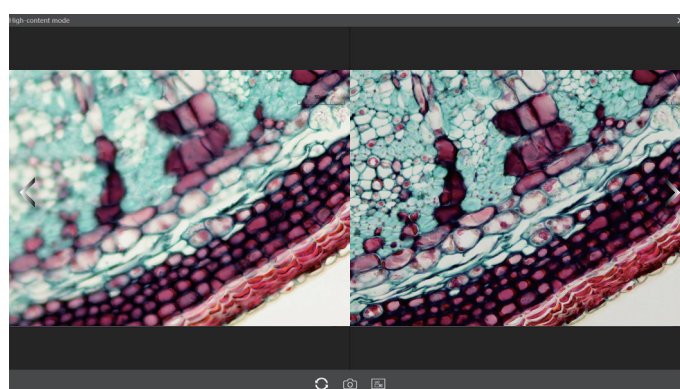


	Open document	Retrieve images from the local disk to the software.
	Save	After annotating the picture, adding text, etc., click the "Save" button to save the current annotation, text, etc
	Back to preview	If a still image is retrieved from the window, clicking this button will return the window to the preview dynamic picture.
	Select object	Select "objects" such as annotations, text, measurements, etc. for the next step, such as moving, deleting, etc. Support single selection or select them by drawing a big box around them.
	Drag	Use the mouse to drag the still image.
	Undo	Undoing the last operation on an "object".
	Redo	Redoing the last operation on an "object".

	Removal tool / Eraser tool	Delete or erase the selected "object" with a single click.
	Compare with multiple windows	 Options of Full screen / Home screen / Dual screen comparison / Four screen comparison.
	Flip	Flip the image on the currently selected screen.
	Mirror	Mirror the image on the currently selected screen.
	Take a picture	Take a picture on the currently selected screen.
	Screenshot	Screenshot on the entire computer desktop.
	Record	Record on the currently selected screen.
	Screen record	Screen record on the entire computer desktop.
	Automatic depth-of-field fusion function for high content images	Automatic extraction of the clearest areas of the captured image for fusion , take one picture, two archives.
	Core	Equal scale cropping of images.
	Combine channels	Assign fluorescence channels to selected images.
	Combined color images	Composite overlay of selected color fluorescence images.

2.2.2 Automatic depth-of-field fusion function for high content images

Automatic depth-of-field fusion function for high content images works with USB or WiFi connection. Break through the limitation of insufficient depth-of-field in high magnification objective lenses, and to adjust the focal length can obtain a greater depth of field, thus obtaining a sharper image than a real-time single-frame image, support taking one picture, two archives.



Operation steps:

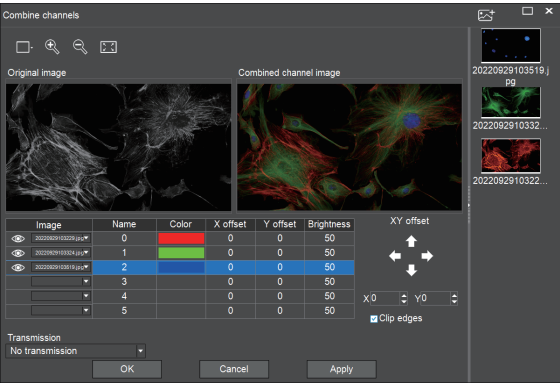
Step 1. Click "  " button, a dual screen appears, the left screen is in line with the focal plane under the eyepiece, and the right screen is the result of high content fusion.

Step 2. Adjust the microscope coarse/fine focus knob, the depth-of-field fusion in real time on the right screen. If you switch the field of view midway, you can click "  " button to refresh.

Step 3. Click "  " button to automatically save two pictures on the left and right screen , close the current window to exit , click "  " button to enter the file manager and export pictures.

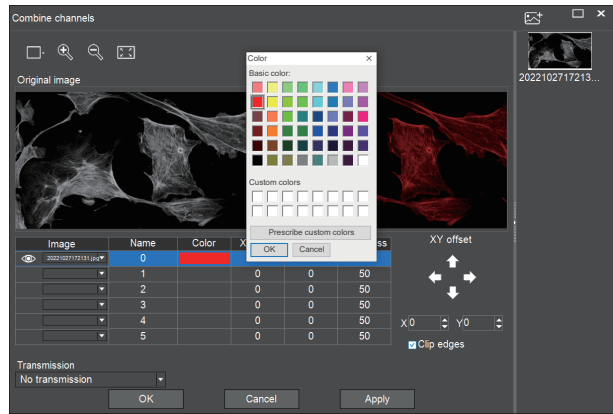
2.2.3 Combine channels

Fluorescent channels can be assigned quickly

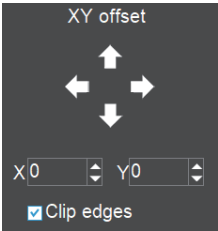


	Live image taking
	Preview window setting: double window to display original image and combine channels image separately, single window to display combine channels image only
	Image Zoom
	Image reduction
	Adapts to screen size
	Import images

Fluorescence channels can be specified for imported images (as shown in the figure below)



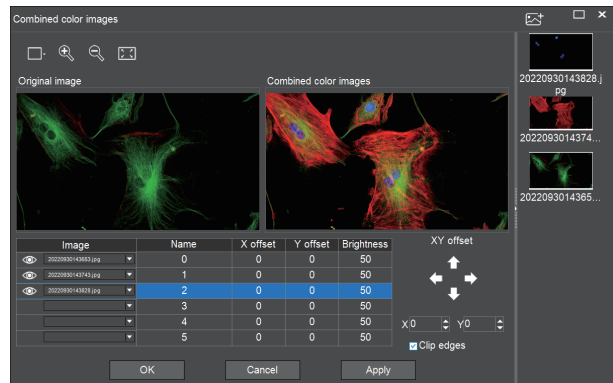
Allows direct input of X, Y, and brightness values for fine adjustment.



Note: Please import images with the same resolution, otherwise the image import will fail.

2.2.4 Combined color images

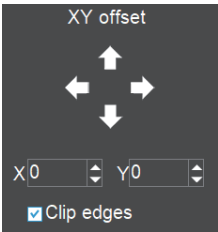
Color fluorescent images can be quickly combined.



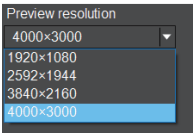
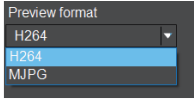
Note: Please import images with the same resolution, otherwise the image import will fail.

Allows direct input of X, Y, and brightness values for fine adjustment.

	Live image taking
	Preview window setting: double window to display original image and combine channels image separately, single window to display combine channels image only
	Image Zoom
	Image reduction
	Adapts to screen size
	Import images



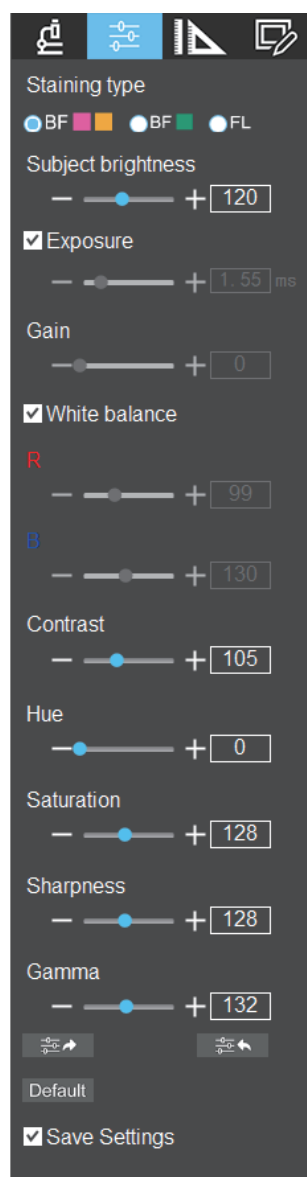
2.3 Working mode bar

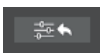
	Preview resolution	Any of the resolutions in the drop-down list can be set for preview.
	Preview format	You can switch between MJPG and H264 preview formats. The advantage of H264 format is that the image quality is more transparent, but it requires a higher computer configuration. The advantage of MJPG format is that it requires a lower computer configuration, but the picture quality is not as good as H264.

2.4 Camera property control



Adjust the corresponding image property parameters as needed to achieve the desired image effect.

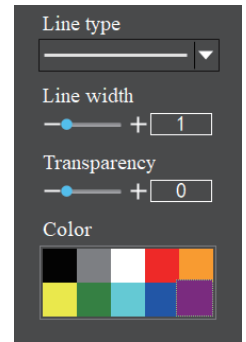


Staining tape	Users can select different exclusive types of stained pathology sections to obtain matching image effects and more accurate color reproduction. BF type 1: for bright-field, red or gold-based sections. BF type 2: for bright-field, cyan-dominated sections. FL type: for fluorescence observation.
Brightness	Manually drag the adjustment bar to adjust the image brightness.
Exposure	When checked, the camera will automatically expose according to the environment used. When unchecked, manual exposure can be performed through the adjustment bar, supporting direct input of values in the box.
White Balance	Manual white balance adjustment can be made through the adjustment bar, supporting direct input of values in the box. Click on "R" will restore the default value of the R channel alone. Click on "B" will restore the default value of the B channel alone
Gain	Manually drag the adjustment bar to adjust the image gain. Support for entering values directly in the box. Click on "Gain" will restore the default value of gain alone.
Contrast	Manually drag the adjustment bar to adjust the image contrast. Support for entering values directly in the box. Click on "Contrast" will restore the default value of contrast alone
Hue	Manually drag the adjustment bar to adjust the image hue. Support for entering values directly in the box. Click on "Hue" will restore the default value of hue alone.
Saturation	Manually drag the adjustment bar to adjust the image saturation. Support for entering values directly in the box. Click on "Saturation" will restore the default value of saturation alone.
Sharpness	Manually drag the adjustment bar to adjust the image sharpness. Support for entering values directly in the box. Click on "Sharpness" will restore the default value of sharpness alone.
Gamma	Manually drag the adjustment bar to adjust the image gamma. Support for entering values directly in the box. Click on "Gamma" will restore the default value of gamma alone.
Export image properties	 Exporting image properties to local disk.
Import image properties	 Import image properties from local disk.
Restore Default values	 Restore all image property parameters to their default values.

2.5 Measuring tools

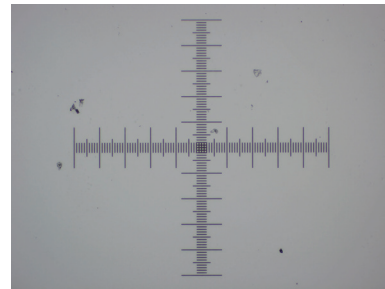


Provides calibration function as well as measurement function for dynamic or still image in the preview window.

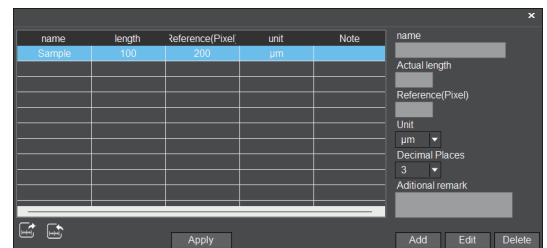


2.5.1 Calibration

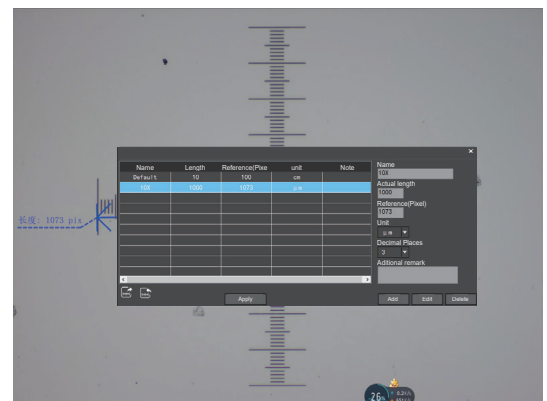
Step 1: Please place the micrometer under the microscope, the example below uses a micrometer with 1DV= 0.01mm.



Step 2: Click on “” to bring up the calibration table as shown below.

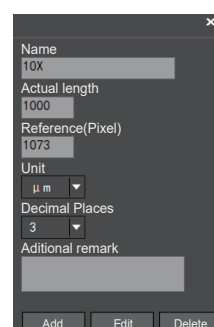


Step 3: When using the mouse to draw a straight line on the micrometer image and setting the scale length, selecting a longer scale length will give more accurate results. For example, selecting 10 small scale lengths will give you more accuracy than selecting only 1 scale length. After releasing the mouse, the image value of the line drawn with the mouse will be automatically updated in the "Benchmark" of the calibration table, as shown in the following figure.



Step 4: Enter a name in the calibration table, such as 10X.

In the calibration table, enter the actual length that just drawn on the micrometer, for example, the sample figure is drawn 100 DV, that is, 1mm, or 1000μm, then enter the "actual length" box to fill in the specified 1000, "unit" select “μm”. Then click "Add" to add this calibration value to the calibration table to be used. Add the calibration value for other objectives of different magnifications in this way.

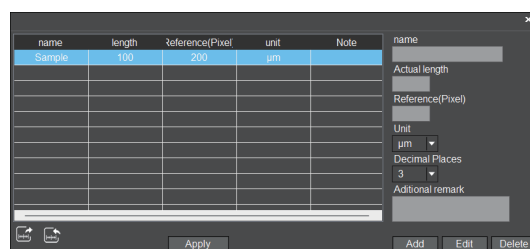


Notes.

- ① "Add": The information in the right box will be added to the list on the left.
- ② "Edit": The calibration value selected in the left list will be modified.
- ③ "Delete": The calibration value selected in the left list will be deleted.
- ④ "Apply": The calibration value selected in the left list will be called.

2.5.2 Select measurement tool for measurement

Firstly, select the calibration value according to the actual objective used in the calibration table and click on "Apply". The following figure shows.:



Then select the measurement tools to measurement as follows:

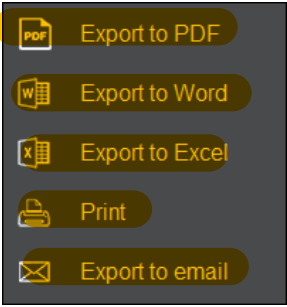
	Linear distance measurement		Concentric circle measurement
	Circular measurement		Concentric radius circle center distance drawing circle measurement
	Rectangle measurement		Ring measurement
	Three-point angle measurement		Manual count
	Parallel line spacing measurement		Font
	Center distance measurement of double parallel lines		Scale mark
	Polyline measurement		Scale bar
	Polygon measurement		Line type
	Arc measurement		
	Three-point vertical line measurement		
	Four-point angle measurement		line width
	Ellipse measurement		Transparency
	Circle radius measurement		Colour
	Three point drawing circle measurement		

The results of each measurement will be displayed on the right side of the software. The user can export the measurement results.

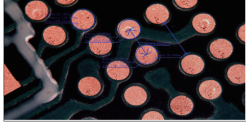
Click the export tool  in the upper right display bar to export data and images to PDF, Word, Excel, printer and mail (Outlook only). Export to PDF, printer and mail functions are only available for still images.

Select Export to Word, as shown below: Enter file name, select path, and click "Save".

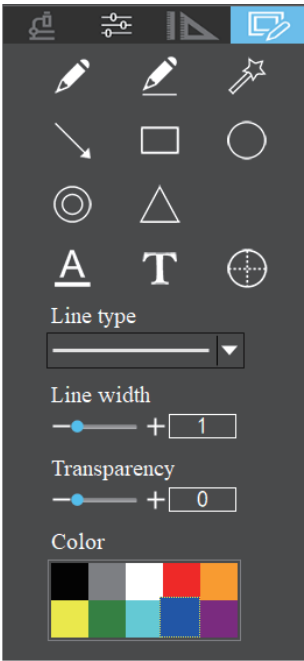
The exported documents are as follows:

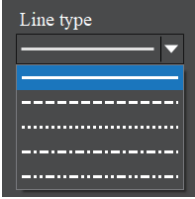
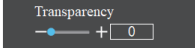
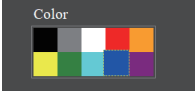


Serial No.	Measure item	Measured value
1	Circular measurement	Radius=21.175 um Perimeter=133.046 um Area=1408.611 um²
2	Concentric circle measurement	Radius1=19.674 um Perimeter1=123.616 um Area1=1216.025 um² Length=60.056 um Radius2=19.507 um Perimeter2=122.569 um Area2=1195.504 um²
3	Linear distance measurement	Length=76.050 um



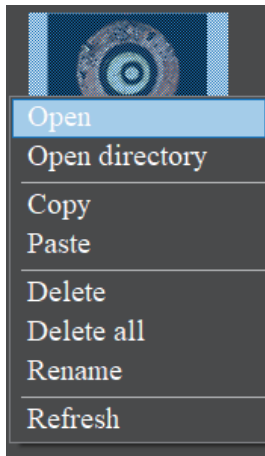
2.6 Drawing tools



	Pencil
	Straight line
	Highlighter
	Single arrow straight line
	Rectangle
	Oval
	Isosceles triangle
	Concentric circles
	Font
	Insert text
	Line type
	Line width
	Transparency
	Colour

2.7 Thumbnail toolbar

Right-clicking on a thumbnail will display the action menu as shown in the figure below.



Open: Open the image in the software default way.

Open directory: Open the directory where the selected image is located.

Copy: Copy the currently selected image.

Paste: Paste the image that has been copied. (Note: Paste can only be done within the thumbnail toolbar).

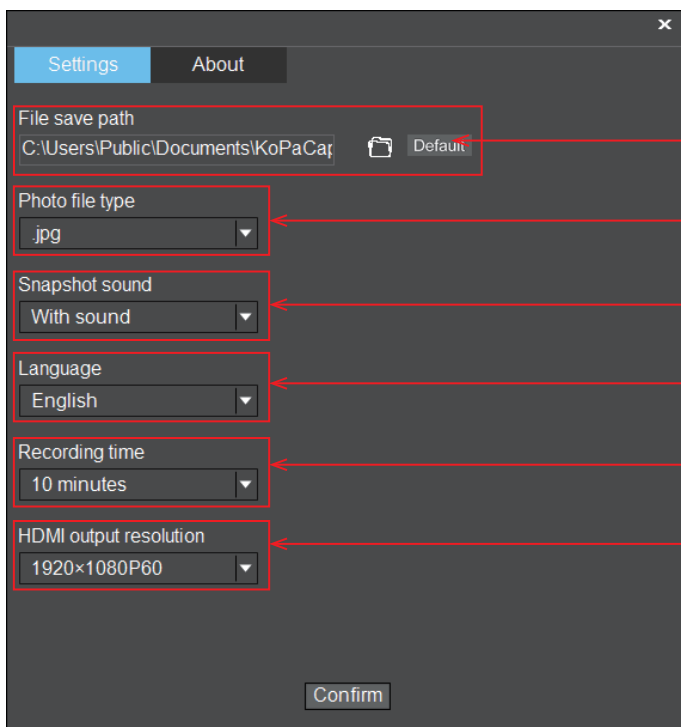
Delete: Permanently delete the selected image and permanently delete the source file.

One-click deletion: permanently delete all thumbnails and permanently delete the source files.

Rename: Rename the selected image.

Refresh: Refresh the current image thumbnail area.

2.8 Software setup



Support access / modify / restore default file save path.

Support modifying image saving format: JPG, BMP, TIFF, PNG.

Support modifying the camera sound as off or on.

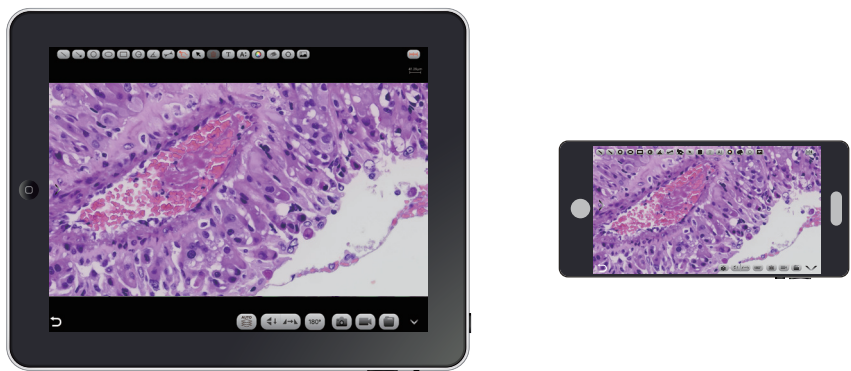
Support for modifying software interface language.

Support modifying the default maximum single recording time.

Support for modifying the image resolution of an external HDMI display. (This function is only valid for cameras with HDMI output).

KoPa WiFi Lab App

User Manual



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- 1.3 Capture images by using the APP- 1 -
 - 1.3.1 The method of scan the connection code- 1 -
 - 1.3.2 Manual connection method- 2 -
- 1.4 APP function introduction- 2 -
 - 1.4.1 Preview window- 2-5 -
 - 1.4.2 Folder Management- 5-6 -
 - 1.4.3 APP Settings- 6 -

1.1 Smart terminal system requirements

Note: smart phones and tablets are collectively referred to as smart terminals in the following.

Please confirm that the smart terminal device hardware must support the 5G WiFi IEEE802.11ac protocol, otherwise it will not be able to acquire the image correctly.

System	System version	CPU	Memory RAM	Storage ROM	Protocol
Android	5.0 and later version	Dual core 1.7GHz and later version	3GB or more	32GB or more	5G WiFi IEEE802.11ac
iOS	11.0 and later version	Dual core 1.8GHz and later version	2GB or more	32GB or more	

1.2 APP download and installation

Method 1: Scan the camera's APP QR code with the smart terminal's browser, and download and install [KoPa WiFi Lab] according to your cell phone system.

Method 2: Enter the following download link directly on the browser of your smart terminal: <https://cn.ostec.com.cn/downloads/kopa-wifi-lab>

Download and install [KoPa WiFi Lab] according to your cell phone system.

Method 3: Android users outside of mainland China can search and download [KoPa WiFi Lab] from Google Play, the Google App store.

iOS users can search and download [KoPa WiFi Lab] from the Apple App Store.

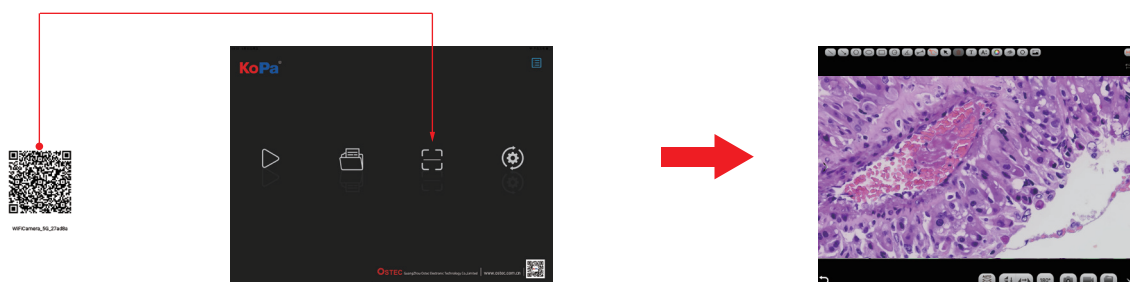


Note! APP installation process will prompt to allow permissions, please click all allow, otherwise the APP will not be able to use normally.

1.3 Capture images by using the APP

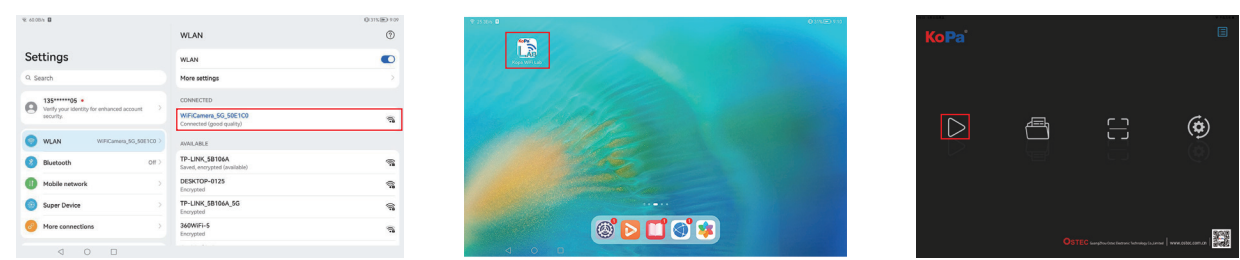
1.3.1 The method of scan the connection code:

Click the button “” on the [KoPa WiFi Lab] navigation interface and scan the QR code on the camera body to automatically connect to the microscope screen without entering a password.

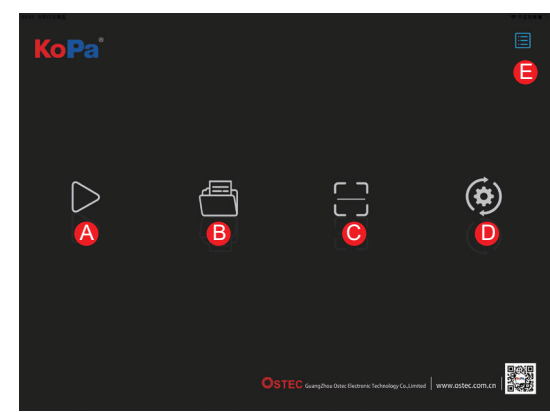


1.3.2 Manual connection method :

- 1) Search for the camera's WiFi SSID: WiFiCamera_5G_xxxxxx or WiFi5Camera_xxxxxx in the WLAN of the smart terminal; default connection password: 12345678.
- 2) Enter the App [KoPa WiFi Lab] navigation interface, and click the button “▶” to connect to the microscope screen manually.

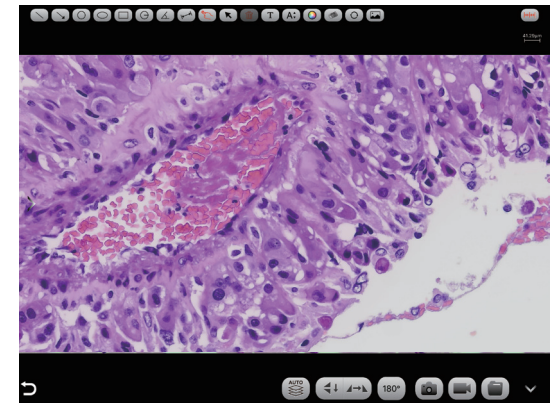


1.4 APP function introduction



A	Preview	Click and enter the image preview window.
B	File folder	View photo / video files.
C	Scanning	Scan the camera's serial number SSID QR code to acquire the image. Note:To ensure preview speed, it is recommended that no more than 13 smart devices (mobile phone or tablet) connect to the same camera at the same time.
D	Settings	APP settings.
E	User instructions	Retrieve / hide user instructions.

1.4.1 Preview window



(2)Measurement tools

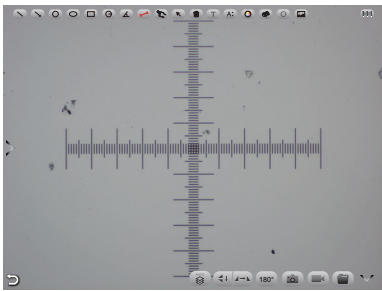
	Rectangular		Linear measurement
	Rounded radius		Calibration
	Protractor		

(1)Annotation tools

	Line		Add text
	Single-arrow		Font size
	Round		Colour
	Oval		Eraser
	Hand-draw		Rotate
	Select		Add a picture
	Delete		

Use the APP for calibration and measurement (mouse access to cell phone is recommended for calibration and measurement) .

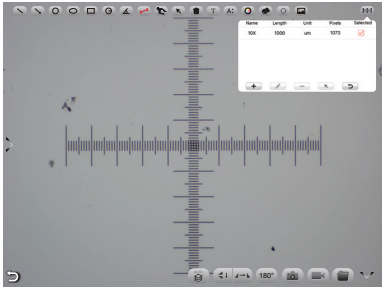
Step 1: Place the calibration scale within the microscope's field of view;



Step 2: Click on the Calibration button “” ;

Step 3: Select the Add button “”;

Name	Length	Unit	Pixels	Selected
10X	1000	um	1073	☒



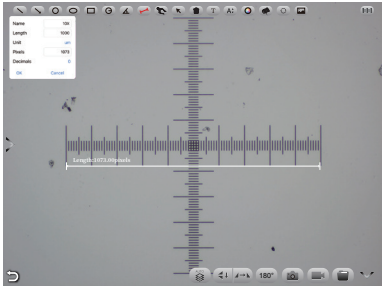
Step 4: Enter the name, the actual length of the calibration scale, and select the unit.

When you draw on the ruler, the pixels are automatically entered as shown below.

Click "OK" to complete the calibration;

Step 5: Click on the calibration value matching the objective and use the Select button “”;

Step 6: Use the measurement tool of the preview window to measure.

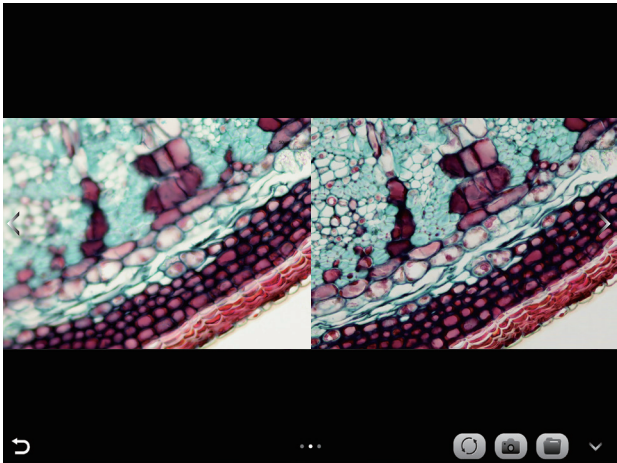


(3)Image processing tools

	Automatic depth-of-field fusion function for high content images		Flip / Mirror		180°Rotation
	Take picture		Record		File management

Automatic depth-of-field fusion function for high content images

Automatic depth-of-field fusion function for high content images works with USB or WiFi connection. Break through the limitation of insufficient depth-of-field in high magnification objective lenses, and to adjust the focal length can obtain a greater depth of field, thus obtaining a sharper image than a real-time single-frame image,support taking one picture, two archives.



Operation steps:

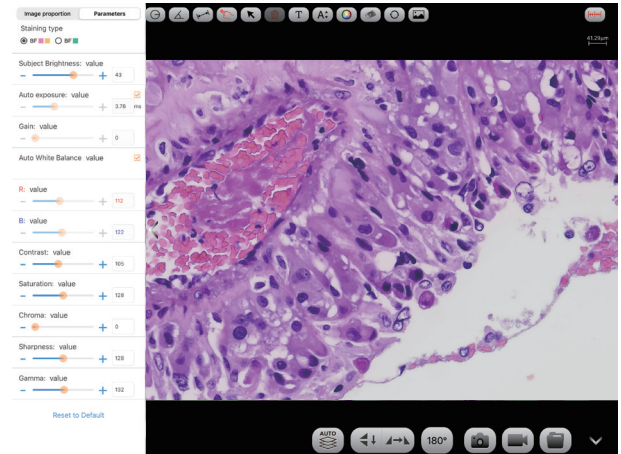
Step 1. Click "  " button, a dual screen appears, the left screen is in line with the focal plane under the eyepiece, and the right screen is the result of high content fusion.

Step 2. Adjust the microscope coarse/fine focus knob, the depth-of-field fusion in real time on the right screen. If you switch the field of view midway, you can click "  " button to refresh.

Step 3. Click "  " button to automatically save two pictures on the left and right screen , close the current window to exit , click "  " button to enter the file manager and export pictures.

(4) Camera control tools

Click the arrow button on the left side of the preview window to bring up the camera control bar.



1) Image ratio

Support switching 4:3 /16:9 image ratio.



2) Camera staining type

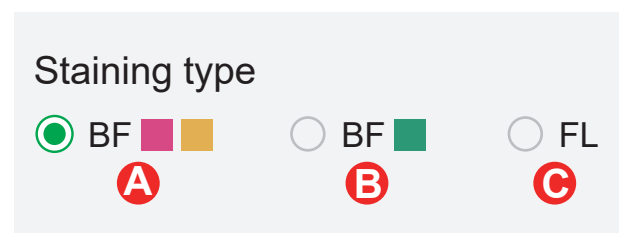
Users can select different exclusive types of stained pathology sections to obtain matching image effects and more accurate color reproduction.

Type A: for bright-field, red or gold-based sections;

Type B: for bright-field, cyan-dominated sections;

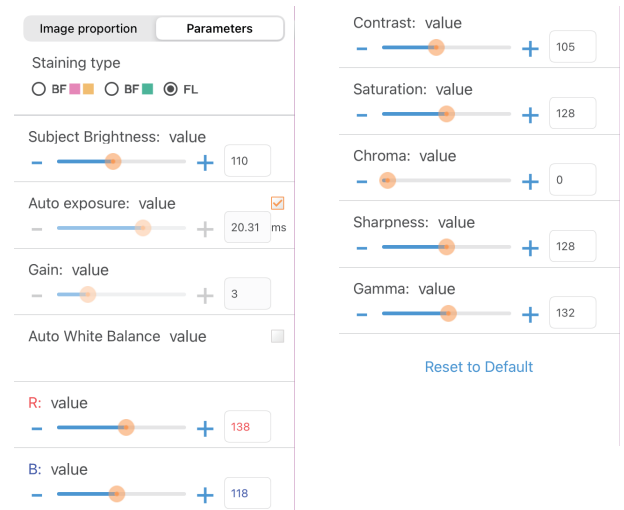
Type C: for fluorescence observation.

Note: Type C will only be displayed if the camera's firmware type supports type FL. Please switch the firmware type from "KoPa Capture Pro" or "KoPa WiFi Lab AO".



3) Camera properties adjustment

Support adjusting Subject Brightness, auto/manual Exposure, Gain, auto/manual White Balance (RB channel is adjusted separately), Contrast, Saturation, Chroma, Sharpness, Gamma, Restore to Default.



1.4.2 Folder Management

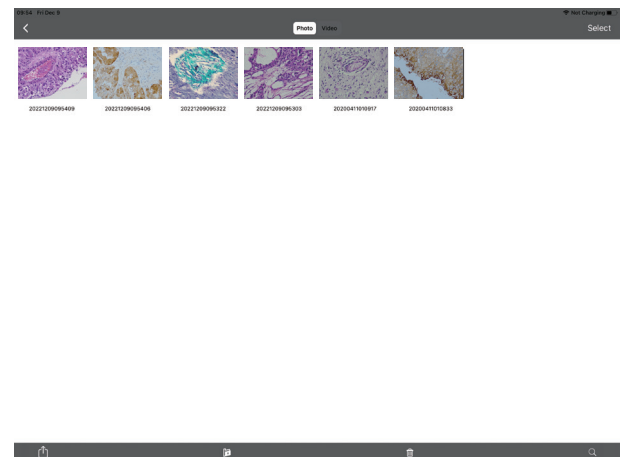
(1) Images management

Click on "Select" in the upper right corner to make single or multiple selections and then click the button at the bottom, from left to right, respectively:

One-click export to local album;

Note: Please select Allow APP to access your album by setting your smart devices (mobile phone or tablet) "Setting - Privacy - Photo" , otherwise it will prompt "Export fail".

Share to social networks; One-click delete; Search image file by name.

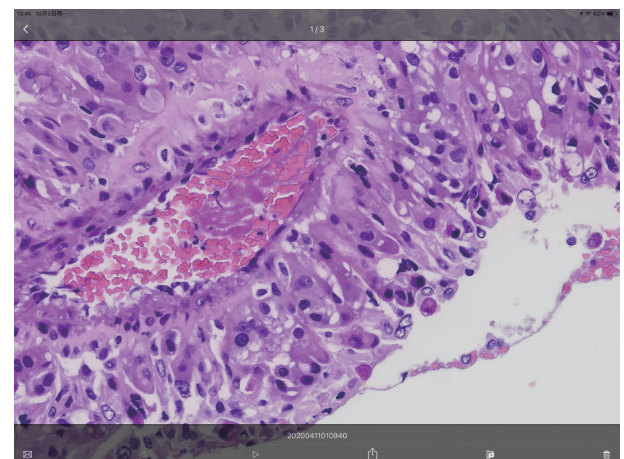


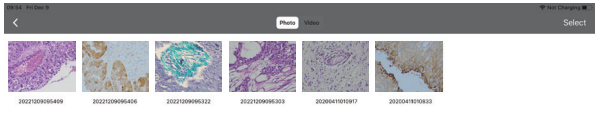
Click to enter any image, the button at the bottom from left to right:

Send to the mailbox (the smart devices needs to be installed in advance with the mailbox);

The previous image; The next image; Share a single image to the social network;

Export the image to the local album; Delete the picture.

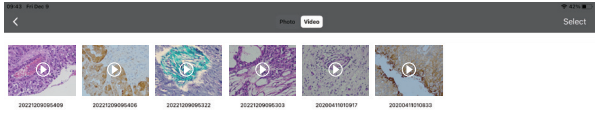




Rename

20200411010940

CancelDone



Click on the file name to rename.

Video management

- Click "Select" in the top right corner and then click the button at the bottom, from left to right, respectively:
- One-click Export to local album;
 - Note: Please select Allow APP to access your album by setting your smart devices (mobile phone or tablet) "Setting - Privacy - Photo". otherwise it will prompt "Export fail".
 - One-click Delete.

1.4.3 APP settings

Select camera	When there are two or more cameras in the LAN, you can select the cameras to be connected through the list.
Export QR code	Electronic digital QR code exportable.
Export photo to album	The photos taken by the APP will be automatically backed up to your phone album after you check the box.
Always show guidelines	The operation guide will show every time you launch the APP after you check the box.
Show scale bar	Check the box to show the scale in the preview window, uncheck it to hide the scale.
Allow switching image quality mode in high content mode	When checked, two image quality mode functions, speed priority and quality priority, will appear each time the high content mode is opened to switch.

Select camera

Export QR code

Export photo to album

Always show guidelines

Show scale bar

Allow switching image quality mode in high content mode

Software version 4.8

Firmware version

Back

Certificate of Registration

品質マネジメントシステム - ISO 9001:2015

This is to certify that:

株式会社ニコン
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長尾台町471

NIKON CORPORATION
Healthcare Business Unit
Yokohama Plant
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Sakae-ku, Yokohama,
Kanagawa
244-8533
Japan

認証登録番号: FM 730353

上記組織が認証登録番号FM 730353を保有し、また下記認証登録範囲について ISO 9001:2015 の要求事項に適合した品質マネジメントシステムを実施していることをここに証します。

顕微鏡、顕微鏡用レンズ及びアクセサリの設計開発、製造、販売、修理
Design and development, manufacture, sales, and repair of microscope, microscope lens and accessories.

For and on behalf of BSI:



Michael Lam - Managing Director Assurance, APAC

初回認証登録日: 1993-10-29

最新更新日: 2023-10-04

発効日: 2023-11-28

有効期限日: 2026-11-27

Page: 1 of 2



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認証登録番号： FM 730353

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NIKON CORPORATION
Healthcare Business Unit
Yokohama Plant
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Sakae-ku, Yokohama,
Kanagawa
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Japan

顕微鏡、顕微鏡用レンズ及びアクセサリの設計開発、製造管理、修理
Design and development, manufacture control and repair of
microscope, microscope lens and accessories.

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顕微鏡、顕微鏡用レンズ及びアクセサリの販売
Sales of microscope, microscope lens and accessories.

初回認証登録日： 1993-10-29

発効日： 2023-11-28

最新更新日： 2023-10-04

有効期限日： 2026-11-27

Page: 2 of 2

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 13485:2016 & EN ISO 13485:2016

This is to certify that: NIKON CORPORATION
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Yokohama Plant
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Sakae-ku, Yokohama,
Kanagawa
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Japan

株式会社ニコン
ヘルスケア事業部
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〒244-8533
神奈川県
横浜市栄区
長尾台町471

Holds Certificate No: MD 711119

and operates a Quality Management System which complies with the requirements of ISO 13485:2016 & EN ISO 13485:2016 for the following scope:

Design, Manufacture and Servicing of Biological Microscope
生物顕微鏡の設計、製造、付帯サービス

For and on behalf of BSI:


Graeme Tunbridge, Senior Vice President Medical Devices

Original Registration Date: 2019-11-20

Latest Revision Date: 2023-10-04

Effective Date: 2023-11-15

Expiry Date: 2026-11-14

Page: 1 of 2



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Certificate No: MD 711119

Location

Registered Activities

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Design, Manufacture Control and Servicing of Biological
Microscope
生物顕微鏡の設計、製造管理、付帯サービス

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Sales of Biological Microscope
生物顕微鏡の販売

Original Registration Date: 2019-11-20

Effective Date: 2023-11-15

Latest Revision Date: 2023-10-04

Expiry Date: 2026-11-14

Page: 2 of 2

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