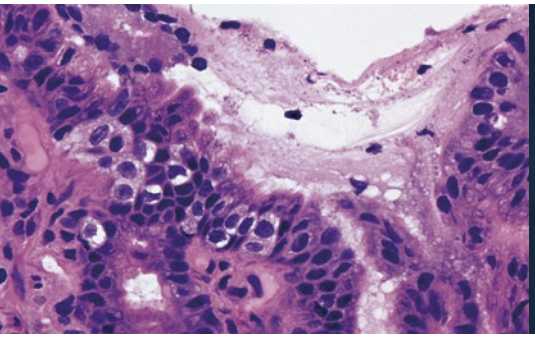
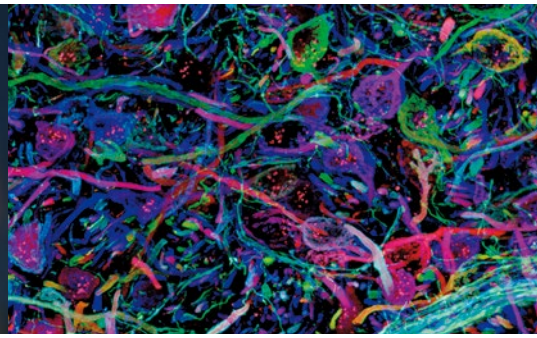
OLYMPUS

Comprehensive Catalog

Life Science Equipment

For Biological Applications

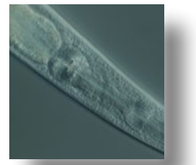


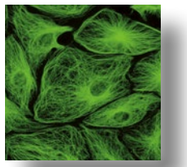


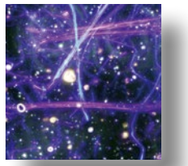
New avenues of research are opening in the biological and medical fields. As research demands become more specialized and diversified, biological microscopes must offer capabilities to meet these needs. Olympus microscopes and their accessories are designed to meet the ever-changing needs of research applications.

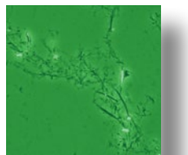
Olympus was founded as a microscope company and continues to support cutting-edge scientific discoveries by developing new microscope imaging technology. With over 100 years of optical experience and many award-winning designs, we offer a wide range of high-performance microscopes along with accessories to enhance your system.

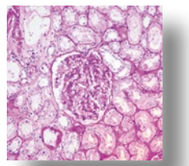
Equip your laboratory with the latest microscope cameras, software, objectives, and cell culture equipment to enable better experiments. Whether you need a basic imaging system or an advanced, specialized configuration, our versatile solutions offer user-friendly features and excellent imaging performance to support your science.











FV3000

CX33

OLYMPUS Provi CM20

IXplore

BX53-P

SZX10

DP74+BX63

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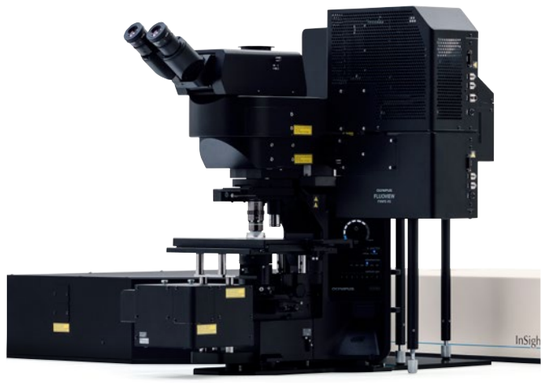
FLUOVIEW FVMPE-RS

Multiphoton Laser Scanning Microscope

A LINE



FVMPE-RS twin lasers system
(Upright microscope configuration)

The FLUOVIEW FVMPE-RS multiphoton laser scanning microscope meets many performance needs for deep observation. It delivers high-speed imaging essential for capturing rapid in vivo responses and offers ideal spot excitation with intense energy—even at deep sites. It also provides high S/N imaging for efficient detection of scattered fluorescence photons, simultaneous dual wavelength excitation at deep sites, visible or multiphoton laser light stimulation, and synchronization with patch clamp data. Put simply, the FVMPE-RS system combines high-speed deep observation capabilities with multicolor imaging and powerful laser light stimulation for the researcher who refuses to compromise.

Laser unit	Qualified IR pulsed lasers with negative chirp for multi photon excitation	Ultrafast pulsed lasers [femtosecond laser (equipped with a group velocity dispersion correction/control device)], laser power unit, water-cooled circulating chiller
	Optional visible light laser for stimulation	405 nm/ 50 mW, 458 nm/ 20 mW, 588 nm/ 20 mW laser source with AOTF attenuation. 0% – 100%, 0.1% increment, < 2 µs rising time
Scanning unit	Scanning method	Light deflection via 2 silver-coated galvanometer scanning mirrors, or silver-coated resonant scanning mirror.
	Scanning mode	XY, XYZ, XYT, XYZT, free line, XZ, XT, XZT, PointT
	Galvanometer Scanner (Normal Imaging)	Galvanometer ROI scanning: Rectangle Clip, Ellipse, Polygon, Free Area, Line, FreeLine & Point. Zoom: 1.0X – 50.0X with 0.01X increment, support 0° – 360° rotation and pan
	Resonant Scanner (High-Speed Imaging)	Resonant ROI scanning: Rectangle Clip, Line. Zoom: 1.0X – 8.0X with 0.01X increment
	Non Descanned MPE imaging detectors	Reflected detection: 2 or 4 channel configuration: 2 PMTs configuration, 4 PMTs configuration or 2 PMTs + 2 cooled GaAsP-PMTs Transmitted detection: 2 PMTs unit with high NA condenser.
	Optional Simultaneous Stimulation Scanner	Highly synchronized simultaneous stimulation scanner, including a set of Galvanometer Scanner, VIS and IR laser port. ROI scanning: Rectangle Clip, Ellipse, Polygon, Tornado, Free Area, Line, FreeLine & Point.

*Please refer to FVMPE-RS catalog for further details

TRU RESOLUTION

Maximize the deep imaging performance of your multiphoton microscope with TruResolution objectives. An automated correction collar compensates for spherical aberration at every depth, delivering bright, high-resolution images from the top to bottom of your image stack.

	FV30-AC10SV	FV30-AC25W
Magnifications	10	25
NA	0.6	1.05
W.D.	8 mm	2 mm
Cover Glass Thickness	0 mm–0.23 mm	0 mm–0.23 mm
Immersion Liquid	SCALEVIEW-A2 (water, silicone oil, and normal oil available)	Water
Special Features	Auto compensation, optimized for multiphoton imaging	Auto compensation, optimized for multiphoton imaging

FLUOVIEW FV3000

Confocal Laser Scanning Microscope

X LINE

FV3000 (IX83 configuration)

The FLUOVIEW FV3000 series of confocal laser scanning microscopes meets some of the most difficult challenges in modern science. Featuring the high sensitivity and speed required for live cell imaging as well as deep tissue observation, the FV3000 microscope enables a wide range of imaging modalities, including macro-to-micro imaging, super resolution microscopy, and quantitative data analysis. Choose between upright and inverted microscope frames suited for a range of life science applications, including developmental biology, stem cell research, electrophysiology, cancer research, slide imaging, and more.

		FV3000	FV3000RS
Main Laser Combiner	Violet/Visible Light Laser	405 nm: 50 mW, 488 nm: 20 mW, 561 nm: 20 mW, 640 nm: 40 mW One optional laser port for sub laser combiner or optional laser unit	
Optional Laser	Sub Laser Combiner	Laser as follows (max. 3 laser units) 445 nm: 75 mW, 514 nm: 40mW, 594 nm: 20 mW, connected to main laser combiner	
	Single Laser Unit	445 nm: 75mW, 514 nm: 40 mW, or 594 nm: 20 mW, directly connected to main laser combiner	
Scanner	Scanning Method	2 silver-coated galvanometer scanning mirrors	2 silver-coated galvanometer scanning mirrors 1 silver-coated resonant and 1 silver-coated galvanometer scanning mirrors
	Galvanometer Scanner (Normal Imaging)	Scanning Resolution: 64 × 64 to 4096 × 4096 pixels Scanning Speed (One Way): 512 × 512 with 1.1 s – 264 s. pixel time : 2 µs – 1000 µs. Scanning Speed (Round Trip): 512 × 512 with 63 ms – 250 ms, 256 × 256 with 16 ms – 125 ms Scanning Mode: PT, XT, XZ, XY, XZT, XYT, XYZ, XYλ, XYZT, XYλT, XYλZ, XYλZT	
	Resonant Scanner (High-Speed Imaging)	–	Scanning Resolution: 512 × 32 to 512 × 512 pixels Scanning Speed: 512 × 512 with 33 ms, 512 × 32 with 2.3 ms Scanning Mode: XT, XZ, XY, XZT, XYT, XYZ, XYλ, XYZT, XYλT, XYZ, XYλZT
	Pinhole	Single motorized pinhole, pinhole diameter ø50 – 800 µm (1 µm Steps)	
	Field Number (FN)	18	
High-Sensitivity Spectral Detector		Cooled GaAsP photomultiplier, 2 channels, motorized Volume Phase Holographic transmission diffraction grating	
Spectral Detector		Multi-Alkali photomultiplier, 2 channels, motorized Volume Phase Holographic transmission diffraction grating	
Microscope Frame	Inverted Frame	Motorized inverted microscope IX83 (IX83P2ZF)	
	Upright Frame	Motorized fixed stage upright microscope BX63L	

* Please refer to FLUOVIEW FV3000 catalog for further details

FV3000 (BX63L slide imaging configuration)

FV3000 (BX63L electrophysiology configuration)

BX63

Fully-Automated Microscope

X LINE

The BX63 motorized microscope offers outstanding stability and imaging precision for research applications with a convenient touch-screen interface for ease of use. The system also features a detachable controller that can be positioned to suit your preference or workflow requirements.

Illumination	Built-in Köhler illumination for transmitted light, LED light intensity indicator, motorized field stop • High color rendering index LED light source • 12 V 100 W halogen bulb (pre-centered)	
Focusing	Built-in motorized nosepiece focus Stroke: 20 mm, minimum increment: 0.01 µm, maximum speed: 5 mm/s	
Observation tube	Widefield (FN 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield tilting, telescoping, lifting binocular • Widefield ergo binocular • Widefield binocular
Nosepiece	• Motorized septuple revolving nosepiece • Interchangeable reversed coded septuple nosepiece	
Stage	• Ultrasonic stage (stroke: X: 76 mm × Y: 52 mm, maximum speed: 30 mm/s) • Ceramic-coated coaxial stage with left or right hand drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available • Cross stage with short left handle	
Condenser	• Motorized universal condenser (NA 0.9, motorized 8-position turret, aperture stop, polarizing filter in/out mechanism and top lens swing out mechanism), for 1.25X – 100X [swing-out 1.25X – 4X, with oil top lens: (NA 1.4)] • Swing out Achromatic (NA 0.9), for 1.25X – 100X (swing-out: 1.25X – 4X) • Achromatic Aplanatic (NA 1.4), for 10X – 100X • Universal (NA 0.9), for 1.25X – 100X [swing-out: 1.25X – 4X, with oil top lens:(NA 1.4)] • Ultra low (NA 0.16), for 1.25X – 4X • Darkfield dry (NA 0.8 – 0.92), for 10X – 100X • Darkfield oil (NA 1.20 – 1.40), for 10X – 100X	
Other features	Motorized 9-position ND filter wheel, high-performance control box U-RTCE	
Dimensions (W × D × H)	294.5 mm × 740.5 mm × 582.5 mm (Epifluorescence configuration)	
Weight	35 kg (Epifluorescence configuration)	

*Please refer to BX63/BX53 catalog for further details

BX53

Semi-Motorized Fluorescence Microscope

UIS2 World-leading optics

The BX53 semi-motorized fluorescence microscope can be configured to meet virtually any research need. It supports a wide range of fluorescence imaging applications and offers advanced features for enhanced operating ease and process flexibility.

Illumination	Built-in Köhler illumination for transmitted light, Light preset switch, LED light intensity indicator, Built-in filters (LBD-IF, ND6, ND25, optional) high color rendering index LED	
Focusing	Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, Torque adjustment for coarse adjustment knobs, Stage mounting position variable, High sensitivity fine focusing knob (minimum adjustment gradations: 1 µm)	
Observation tube	Widefield (FN 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield tilting, telescoping, lifting binocular • Widefield ergo binocular • Widefield binocular
	Super widefield (FN 26.5)	• Super widefield trinocular • Super widefield erect image tilting trinocular
Nosepiece	Interchangeable reversed quintuple/coded quintuple, sextuple/coded sextuple, septuple/coded septuple nosepiece	
Stage	Ceramic-coated coaxial stage with left or right hand drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available (non-stick grooved coaxial, plain, rotatable stages are also available)	
Condenser	• Abbe (NA 1.1), for 4X – 100X • Swing out Achromatic (NA 0.9), for 1.25X – 100X (swing-out:1.25X – 4X) • Achromatic Aplanatic (NA 1.4), for 10X – 100X • Phase contrast, darkfield (NA 1.1), [phase contrast: for 10X – 100X, darkfield: for 10X – 100X (up to NA 0.80)] • Universal (NA 0.9), for 1.25X – 100X [swing-out: 1.25X – 4X, with oil top lens: (NA 1.4)] • Low (NA 0.75), for 2X – 100X (Dry) • Ultra low (NA 0.16), for 1.25X – 4X • Darkfield dry (NA 0.8 – 0.92), for 10X – 100X • Darkfield oil (NA 1.20 – 1.40), for 10X – 100X	
Dimensions (W × D × H)	274.5 mm × 614 mm × 469 mm (Epifluorescence configuration)	
Weight	21 kg (Epifluorescence configuration)	

*Please refer to BX43/BX46/BX53 catalog for further details

BX43

Manual System Microscope

UIS2 World-leading optics

The BX43 microscope enables you to choose between cost-efficient and advanced configurations, depending on your needs. Modular components, such as ergonomic observation tubes and stages, make it simple to customize the microscope to your application.

- Supports a wide range of observation methods
- Special features for enhanced operator comfort
- LED matches the color rendering of a halogen bulb with a filter to show the real color of stains or samples
- Exceptional quality UIS2 optics

Illumination	Built-in Köhler illumination for transmitted light, light intensity manager switch High color rendering index LED light source	
Focusing	Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, Torque adjustment for coarse adjustment knobs, Stage mounting position variable, High sensitivity fine focusing knob (minimum adjustment gradations: 1 µm)	
Observation tube	Widefield (FN 22)	• Widefield tilting, telescopic and lifting binocular • Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield ergo binocular • Widefield binocular
	Super widefield (FN 26.5)	• Super widefield trinocular • Super widefield erect image tilting trinocular
Nosepiece	Interchangeable reversed quintuple/coded quintuple, sextuple/coded sextuple, septuple/coded septuple nosepiece	
Stage	Ceramic-coated coaxial stage with left or right hand drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available (non-stick grooved coaxial, plain, rotatable stages are also available)	
Condenser	• Abbe (NA 1.1), for 4X – 100X • Swing out Achromatic (NA 0.9), for 1.25X – 100X (swing-out: 1.25X – 4X) • Achromatic Aplanatic (NA 1.4), for 10X – 100X • Phase contrast, darkfield (NA 1.1), [phase contrast: for 10X – 100X, darkfield: for 10X – 100X (up to NA 0.80)] • Universal (NA 0.9), for 1.25X – 100X [swing-out: 1.25X – 4X, with oil top lens: (NA 1.4)] • Low (NA 0.75), for 2X – 100X (Dry) • Ultra low (NA 0.16), for 1.25X – 4X • Darkfield dry (NA 0.8 – 0.92), for 10X – 100X • Darkfield oil (NA 1.20 – 1.40), for 10X – 100X	
Dimensions (W × D × H)	274.5 mm × 362 mm × 410 mm (Standard configuration)	
Weight	13.2 kg (Standard configuration)	

*Please refer to BX43/BX46/BX53 catalog for further details

BX46

Clinical Microscope

UIS2 World-leading optics

The BX46 microscope offers outstanding brightfield clarity for screening and other routine clinical laboratory work. An ultra-low stage provides easy sample movement while energy-efficient LED illumination helps reduce eyestrain during extended use.

- Supports brightfield and simple polarized light observation methods
- Ergonomic features to support comfort during high-volume cytology and pathology workflows
- LED matches the color rendering of a halogen bulb with a filter to show the real color of stains or samples
- Exceptional quality UIS2 optics

Illumination	Built-in Köhler illumination for transmitted light, light intensity manager switch High color rendering index LED light source	
Focusing	Fixed low stage nosepiece focus 15 mm focus stroke with coarse adjustment limit stop Torque adjustment for coarse adjustment knobs High sensitivity fine focusing knob (adjustment gradations: 1 µm)	
Observation tube	Widefield (FN 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield tilting binocular • Widefield tilting, telescoping, lifting binocular • Widefield ergo binocular • Widefield binocular
Nosepiece	Fixed reversed coded quintuple nosepiece	
Stage	Ceramic-coated coaxial stage with left or right hand ultra low drive control, rotating mechanism and torque adjustment mechanism (low torque, plain, and rotating stages are also available)	
Condenser	Built-in condenser (NA 0.9) 1.25X – 100X (swing out: 1.25X – 2X)	
Dimensions (W × D × H)	274.5 mm × 362 mm × 410 mm (Standard configuration)	
Weight	17 kg (Standard configuration)	

*Please refer to BX43/BX46/BX53 catalog for further details

BX51WI

Fixed Stage Upright Microscope

The BX51WI microscope is ideal for all physiological experiments such as patch clamping and intravital microscopy. The fixed stage and vibration-free frame design ensure excellent stability throughout the experiment. Use of infrared light protects living cells and offers high penetration depths of thick tissue slices, while high NA optics allow magnification changes without moving the objective.

Illumination	Transmitted light 12 V 100 W halogen Köhler illumination; Light adjustment: less than DC2 V~12 V (continuous adjustment)
Focusing	Nosepiece focus by roller guide; Stroke per rotation: fine: 0.1 mm, coarse: 15 mm; Maximum stroke: 25 mm; Coarse lower limit stopper mechanism, Torque adjustment mechanism for coarse focus
Observation tube	Trinocular (FN 22), erect image trinocular (FN 22), double port magnification change unit (FN 22)
Nosepiece	Swing, Slide, Single position, Swing-slide
Stage	Mechanical, bridge
Condenser	8-position universal, long working distance oblique, long working distance DIC, swing-out
Dimensions (W × D × H)	317.5 mm × 567 mm × 503.8 mm (Epifluorescence Configuration)
Weight	19 kg (Epifluorescence Configuration)

*Please refer to BX51WI catalog for further details

BX53-P

Polarizing Microscope

Orthoscopic version

Conoscopic/
orthoscopic version

The BX53-P polarizing microscope provides superb performance in polarized light applications using a combination of UIS2 infinity-corrected optics and a distinctive optical design. The microscope is versatile to handle observation and measuring applications in virtually any field thanks to an extended line of compatible compensators.

- Bertrand lens for conoscopic and orthoscopic observations
- An extensive range of compensators and wave plates
- Supports BX3 series accessories and camera system

Illumination	High intensity high color rendering index LED, Köhler illumination
Polarizing intermediate tube	Swing-out focusable Bertrand lens with slot for 360° rotatable analyzer for conoscopic & orthoscopic observation (U-CPA)
Test plate	1 wavelength (1λ), 1/4 wavelength (1/4λ)
Compensators	Berek, Senarmont, Brace-Köhler, quartz wedge, etc. (6 types available)
Focusing	Coarse & fine coaxial handle; full stroke: 25 mm; minimum fine adjustment: 1 µm
Observation tube	Trinocular (FN 22)
Nosepiece	Detachable quadruple nosepiece with centering adjustment function
Stage	Circular rotatable stage with centering adjustment function and attachable mechanical stage. 360° graduated in 1° increments, lockable in any position
Condenser	Achromat strain-free condenser with built-in 360° rotatable polarizer (NA 0.18 – 0.9)
Dimensions (W × D × H)	274 mm × 436 mm × 535 mm
Weight	16 kg

*Please refer to BX53-P catalog for further details

BX53LED+MDO

Multi-head Microscope

Multi-head discussion systems are essential for training and education. With the BX53 microscope's LED illumination, up to 26 participants can view clear, bright images.

BX3 Accessories

BX3-RFAA

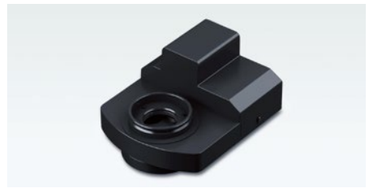
Motorized fluorescence illuminator

The flexibility of the motorized fluorescence illuminator accommodates multi-color stained specimens.
Fly-eye optics provide even, bright illumination.

BX3-URA, BX3-RFAS

Universal reflected illuminator
Coded fluorescence illuminator

A total of eight fluorescence mirror unit options can be attached for comfortable multi-color fluorescence observations.



U-AW

Motorized attenuator wheel

The motorized neutral density filter wheel enables intensity adjustment during fluorescence and transmitted light observation.

- Special adaptors are required for mounting (U-LHEAD for fluorescence, and U-LH100ADP for transmitted light).

BX3-UCD8A

Motorized universal condenser

The motorized universal condenser integrates a variety of optical elements to accommodate transmitted light techniques including brightfield, differential interference contrast, and phase contrast observation.

U-D7REA

Motorized seven-position nosepiece

Equipped with a DIC slider slot, this revolving nosepiece enables simultaneous attachment of seven objectives. It is especially suitable for continuous observations from low to high magnifications.

BX3-SSU

Ultrasonic stage

The ultrasonic stage delivers high-precision XY control. The XY-controller can be mounted on the controller/U-MCZ for the BX63 and functions like conventional stage handles.

IXplore

Inverted Imaging Platform

Each system in the IXplore inverted microscope series is tailored to fit a specific research application to help scientists more efficiently accomplish their goals. IXplore systems provide accurate, reproducible images and data, and can be adapted as experimental needs evolve or become increasingly complex over time.

X LINE A LINE

IXplore Standard
Compound Microscope System

Designed for simple multicolor fluorescence imaging and routine experiments, the IXplore Standard microscope system is easy to operate and capable of excellent, publication-quality images. A range of encoded unit options makes it easy to get accurate and reproducible results.

IXplore Live
Live Cell Imaging Microscope System

Designed for precise live cell imaging, the IXplore Live microscope system helps reduce photobleaching and enhance cell viability for physiological experiments.

IXplore Spin
Confocal Imaging Microscope System

The IXplore Spin microscope system's advanced spinning disk unit contributes to a large field of view, fast 3D confocal image acquisition, and prolonged cell viability in time-lapse experiments.

IXplore Pro
Automated Microscope System

Designed for automated multidimensional observation and easy experiment setup, the IXplore Pro microscope system facilitates effortless data collection and seamless acquisition of panoramic, multichannel images.

IXplore TIRF
TIRF Imaging Microscope System

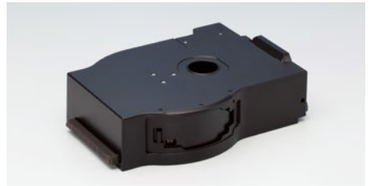
Designed for membrane dynamics, single molecule detection, and colocalization experiments, the IXplore TIRF microscope system offers simultaneous multicolor TIRF imaging for up to 4 colors with high stability.

IXplore SpinSR
Super Resolution Microscope System

Designed for fast 3D super resolution imaging and prolonged cell viability in time-lapse experiments, the IXplore SpinSR microscope system offers XY resolution down to 120 nm without the need for dedicated labeling procedures.

		IXplore Standard	IXplore Pro	IXplore Live	IXplore TIRF	IXplore Spin	IXplore SpinSR
Microscope Frame	IX73	✓					
	IX83		✓	✓	✓	✓	✓
Transmitted Köhler illumination	12 V 100 W halogen (U-LH100L)	✓					
	High color rendering LED (IX3-LHLEDC)		✓	✓	✓	✓	✓
Stage	Mechanical stage with right handle (IX3-SVR)	✓					
	Ultrasonic scanning stage (IX3-SSU)		✓	✓	✓	✓	✓
Condenser	Long working distance universal (IX3-LWUCD)	✓					
	Motorized long working distance universal (IX3-LWUCDA)		✓	✓	✓	✓	✓
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)	✓	✓	✓	✓	✓	✓
Fluorescence mirror turret	Coded fluorescence mirror turret (IX3-RFACS)	✓					
	Motorized fluorescence mirror turret (IX3-RFACA)		✓	✓	✓	✓	✓
Fluorescence mirror unit	UIS2 mirror units	✓	✓	✓	✓	✓	✓
Fluorescence light source	LED and LDP light source (U-LGPS)	✓	✓	✓	✓	✓	✓
Imaging software	cellSens Standard	✓					
	cellSens Dimension		✓	✓	✓	✓	✓
TIRF Illuminator	cellTIRF				✓		
Confocal scanner	Spinning disk confocal scanner					✓	✓
Super resolution processing	Olympus super-resolution (OSR) filter						✓
Accessories	TruFocus system (IX3-ZDC2)			✓	✓	✓	✓
	Remote correction collar controller (IX3-RCC)			✓	✓	✓	✓
	Real-time controller (U-RTC/U-RTCe)			✓	✓	✓	✓
	Incubation housing			✓	✓	✓	✓

IXplore Accessories



IX3-RFACA
Motorized fluorescence mirror turret

An 8-position turret that delivers smooth and rapid switching. Compatible with 25 mm and 32 mm diameter filters. Mirror units can be easily exchanged without tools.

IX3-CAS
Coded intermediate magnification changer

Magnification can be changed between 1X, 1.6X, and 2X. Since the system incorporates coded functionality, information on intermediate magnifications is saved with image data.

IX3-RFALFE
L-shaped-fluorescence illuminator with fly-eye lens

L-shaped fluorescence illuminator with a fly-eye lens system for even illumination without adjustment.

FV31-SPCOV
Umbra light shield

Designed for fluorescence observation, the Umbra light shield blocks out light pollution, even in bright rooms, enhancing fluorescence contrast and improving image clarity.

IX3-LWUCDA
Motorized long working distance universal condenser

Simultaneously accepts up to 6 optical components. Motorization can be controlled through the PC or touch-screen handset.

IX3-RCC
Remote Correction Collar

The remote correction collar unit is used to adjust the lens position within the objective to correct for spherical aberration caused by refractive index mismatch, resulting in dramatically improved signal, resolution, and contrast.

CKX53

Cell Culture Microscope

The CKX53 inverted microscope delivers stable performance and a comfortable workflow for various cell culture needs, including live cell observation, cell sampling and handling, image capture, and fluorescence observation. The system provides clear, reproducible, and high contrast images with a wide visual field.

Set model		Brightfield	Phase Contrast Entry	Phase Contrast Standard	Fluorescence
Focus		Revolving nosepiece vertical movement system using the coarse and fine focusing knobs. Stroke: 20 mm (Focal point: up to 18.5 mm from the plain stage top surface) Stroke per rotation : 36.8 mm (Coarse), 0.3 mm (Fine)			
Stage	Plain stage	252 mm (D) × 200 mm (W) Exchangeable transparent insert plate is incorporated			
	Mechanical stage	Options		XY coaxial knob place on right side of the plain stage Microplate holder equipped with the escape function stage stroke: X = 110 mm, Y = 74 mm	
	Substage			180 mm (D) × 70 mm (W)	
Condenser		Maximum numerical aperture: 0.3 Working distance: 72 mm Applicable objective magnification 2X, 4X, 10X, 20X and 40X up to 190 mm height tissue flask can be loaded on the stage without detachable condenser			
Observation tube		Fixed Trinocular tube, inclined 45 degrees Interpupillary distance 48 – 75 mm Light path: eyepiece/camera port = 100/0 ⇔ 0/100			
Dimensions (W × D × H)		200 mm × 498 mm × 454 mm (Phase contrast entry configuration)			
Weight		6.9 kg	7.1 kg	8.4 kg	12.5 kg

* Please refer to CKX53 catalog for further details

CKX-CCSW

Cell Counting Software

CKX-CCSW

With images captured using an Olympus CKX53 inverted microscope, the CKX-CCSW confluency checker software automatically counts the number of cells and the percent of confluency in variously sized culture vessels. Potential contamination is avoided because cells adhering to culture containers can be counted in the culture vessel. The software's interface is easy to use and offers quick results using its unique counting algorithm. Data is stored as CSV or image files for easy archiving and documentation.

Function	Cell counting, checking cell confluency
Camera	DP22/DP27
Cell Diameter Range	10 – 200 µm (Optimal: 30 – 60 µm)
Output Information	Total cell number and cell density per area both in the image and the whole cell culture vessel
Image Format	Input: TIFF, JPEG (max 4608 × 3456) Output: TIFF, JPEG
Measurement Result File Format	TIFF (Overlay image), CSV
Support language	English, Japanese, Simplified Chinese

* Please refer to CKX-CCSW catalog for further details

For research use only.

Cell Counter model R1

Automated Cell Counter

The R1 provides accurate cell counting results that are useful when plating cells. Counting can be performed with minimal risk of human error and can be finished in a shorter time than with a hematocytometer. The instant automatic report function for the counting results comes in handy for smooth passage.

Cell Counting Time*1	Less than 10 s (manual focusing) Less than 15 s (auto focusing)
Cell Concentration Range	5 × 104 – 1 × 107 cells/mL
Cell Diameter Range	3 – 60 µm (optimal: 8 – 30 µm)
Output information*2	Total / Live / Dead cell concentration Total / Live / Dead cell number Viability Average cell size
Image Resolution	5 Mpixels , Color
Focusing mode	Automatic / Manual focusing with liquid lens
Adjustable parameters	Size, Roundness, Dilution factor, Noise reduction, Declustering
Image Type	TIFF, annotated TIFF
Report Format	PDF
Count Data storage	1,000 counts
Protocol storage	300 protocols
Display	LCD touchscreen: 800 × 480 , 7 inch
USB port	3 ports
Thermal printer	Built-in
Dimensions (W x D x H)	195 mm × 237 mm × 272 mm
Weight	2.1 kg (without the external power adaptor)
Input Power	AC 100 – 240 V 50/60 Hz 1.2 A

*1: Cell counting at less than 1 x 106 cells/ml concentration of HeLa or HL-60 cells.

*2: Live / Dead cell concentration, number and cell viability can be available with trypan blue mode.

* Please refer to Cell Counter model R1catalog for further details

For research use only.

OLYMPUS Provi CM20

Incubation Monitoring System

The CM20 incubation monitoring system provides quantitative data remotely—place the head and your cell cultures in the incubator, and the system will periodically scan it, count the number of cells, and determine confluency. The data can be wirelessly communicated from a computer workstation, so you can monitor your cultures' progress without entering the clean room.

Installation environment (inside the incubator)	Temperature: 37 °C (98.6 °F) + 0.3 °C (0.5 °F), humidity: 0—99%
Applicable vessels	Petri dish (90 mm (3.54 in.), 100 mm (3.94 in.)) Microplate (6 well, 12 well) Flask (T25, T75, T80, T150, T175, T225) Multi-layer flask
Optical performance	Field of view (H × V): 2.84 mm × 2.13 mm (0.11 in. × 0.08 in.); (image size per one shooting) Image size: 1280 × 960 pixels Illumination wavelength: λ = 630 nm (LED) Illumination method: epi-oblique illumination
Sterilization resistance	Autoclave sterilization (for vessel holder and sponge rubber only) UV ray sterilization Hydrogen peroxide (H_2O_2) gas sterilization (CM20H only)
Disinfection resistance	Peracetic acid disinfection (cold sterilant) Alcohol disinfection
Weight	Approx. 3 kg

CX43/CX33

Biological Microscope

CX33

CX43

CX43 and CX33 biological microscopes enable you to remain comfortable during long periods of routine observation. The frame conforms to your hands, and the location of the control knobs maximizes ergonomics to improve work efficiency. With minimal movement, you can quickly set a specimen with one hand while adjusting the focus and operating the stage with the other. An optional camera port is available for digital imaging.

CX33

The CX33 microscope is a great option for everyday brightfield and darkfield observations in one easy configuration.

CX43

The versatile CX43 microscope offers brightfield, darkfield, phase contrast, simple polarization, and fluorescence observation. For added flexibility, the system can support up to five UIS2 objectives.

Illumination	Built-in transmitted Köhler illuminator LED 100 – 120 V/220 – 240 V ~ 0.85/0.45 A 50/60 Hz
Focusing	Stage height movement by roller guide (rack & pinion) Stroke per rotation: 36.8 mm Full stroke range: 25 mm Tension adjustment on coarse focus adjustment knob Upper limit stopper (CX43) Upper limit stopped by simplified pre-focusing dial (CX33)
Observation tube	Binocular/Tilting binocular/Trinocular
Nosepiece	Fixed quintuple (CX43)/quadruple (CX33) nosepiece with inward tilt
Stage	Size: 188 mm (W) × 134 mm (Y) Traveling range: 76 mm (X) × 50 mm (Y) Specimen holder: Double slide holder
Condenser	Abbe condenser, with built-in daylight filter(CX33 only)
Accessories	Dual-observation attachment, phase contrast attachment, drawing attachment, simple polarizing attachment, digital camera adapter etc.
Dimensions (W × D × H)	CX43: 211 mm × 376 mm × 393 mm (standard configuration), CX33: 211 mm × 397 mm × 430 mm
Weight	CX43: Approx. 7.3 kg, CX33: Approx. 7.0 kg

*Please refer to CX43, CX33 catalogs for further details

CX23

Biological Microscope

CX23

Focused on improving the workflow for educational microscopy, the CX23 upright microscope requires minimal setup. The system is easy to carry, use, and store in the classroom with a compact, lightweight design.
This user-friendly microscope offers ergonomic components to ease sample handling and support comfortable observation. Plan achromat objectives help ensure image clarity and flatness throughout the field of view.

Illumination	Built-in transmitted illumination system, LED power consumption 0.5 W (nominal values)
Focusing	Stage height movement (coarse movement stroke 15 mm) Fine focus graduation: 2.5 µm
Revolving nosepiece	Fixed quadruple nosepiece
Stage	Wire movement mechanical fixed stage Traveling range: 76 mm (X) x 30 mm (Y), specimen holder, specimen position scale
Observation tube	30° inclined binocular tube Interpupillary distance adjustment range: 48 – 75 mm Eyepoint adjustment: 370.0 – 432.9 mm
Objectives	Plan Achromart, anti-fungus 4X NA: 0.10 W.D.: 27.8 mm 10X NA: 0.25 W.D.: 8.0 mm 40X NA: 0.65 W.D.: 0.6 mm 100X Oil NA: 1.25 W.D.: 0.13 mm (CX23LEDRFS1 only)
Eyepiece (10x)	Field Number (FN): 20 (anti-fungus)
Accessories	Reflection mirror (CH20-MM), 15X eyepiece (WHSZ15X-H: FN 12, anti-fungus), Dedicated wooden case, Eyepiece micrometer, Darkfield stop (CH2-DS+CH2-FH)
Dimensions (W × D × H)	Binocular: 198 mm × 398 mm × 386 mm, Trinocular: 198 mm × 398 mm × 430 mm
Weight	Approx. 5.9 kg

*Please refer to CX23 catalog for further details

SZX16/SZX10

Research Stereo Microscope System

SZX16 with fluorescence system

SZX10

SZX2 series stereo microscopes are up to the challenge of leading-edge microscopy applications, offering an exceptionally wide zoom ratio and high numerical aperture (NA). Excellent image clarity and a flexible optical system make the SZX2 series easy to use, while their advanced optics, improved functionality, and ergonomic design deliver an outstanding user experience.

SZX16

Designed for advanced research, the SZX16 stereo microscope's darkfield and polarization capabilities, 0.3 numerical aperture, and large 16.4:1 zoom ratio enable you to image whole organisms down to fine microscopic and individual cell structures.

SZX10

A flexible imaging tool for routine research, the SZX10 stereo microscope offers darkfield and polarized light imaging, a maximum numerical aperture of 0.2, a 10:1 zoom ratio, and a Galilean optical system that minimizes distortion.

	SZX16	SZX10
Optical system	Telescope type system	
Zoom range	0.7X – 11.5X (zoom ratio 1: 16.4)	0.63X – 6.3X (zoom ratio 1: 10.0)
	Click stop equipped (releasable)	
Aperture diaphragm	Built-in	
Total mag. range	2.1X – 690X	3.15X – 378X
Working distance	141 (with SDFPLFL0.3X) – 20 mm (with SDFPLAPO2XPFC)	171 (with DFPL 0.5X) – 33.5 mm (with DFPL2X-4)
Observation tube	SZX2-TTR/SZX2-TTRPT: tilting trinocular, 5 – 45° variable inclination SZX2-TR30/SZX2-TR30PT: 30 degree trinocular, 30° inclination SZX2-LTTR: Ergonomic long tilting trinocular, 5 – 45° variable inclination	
	–	SZX-BI30: 30° binocular, 30° inclination SZX-BI45: 45° binocular, 5 – 45° variable inclination
Extendable eyepoint adjuster	SZX2-EEPA: Height adjustment range: 30–150 mm (with a scale attached)	
Objective	SDFLPLFL0.3X, SDFPLAPO0.5XPF, SDFPLAPO0.8X, SDFPLAPO1XPF, SDFPLAPO1.6XPF, SDFPLAPO2XPFC	DFPL0.5X-4, DFPL0.75X-4 DFPLAPO1X-4, SZX-ACH1X, DFPLAPO1.25X, SZX-ACH1.25X-2 DFPL1.5X-4, DFPL2X-4
Eyepiece	WHN10X-H (FN 22)	WHSZ10X-H (FN 22)
	WHSZ15X-H (FN 16), WHSZ20X-H (FN 12.5), WHSZ30X-H (FN 7)	
Focusing	SZX2-FO: Focusing unit, coarse handle stroke 80 mm SZX2-FOF: Fine focusing unit, coarse handle stroke 80 mm, fine handle stroke 80 mm SZX2-FOFH: Fine focusing unit for heavy loading, stroke 80 mm fine handle stroke 80 mm SZX2-FOA: Motorized focus unit, focusing stroke 78 mm	
Accessories	Fluorescence illuminator, coaxial illuminator, light beam splitter, revolving nosepiece, large stage plate, stage adapter	
	–	Eyepoint adjuster, arrow pointer, drawing attachment, side by side discussion tube, etc.
Dimensions (W × D × H)	SZX16: 268 mm × 386 mm × 413 mm (Standard Set Configuration), SZX10: 268 mm × 386 mm × 410 mm (Standard Set Configuration)	

*Please refer to SZX16/SZX10 catalog for further details

SZX Accessories

SZX2-ILLTQ

Quad-position LED transmitted-light illumination base

Four-position turret and cartridges enable you to easily select the observation method and contrast for each specimen. Long-life (60,000 hours) LED light with low power consumption reduces running cost.

SZX2-ILLTS

One-position LED illumination base

For a more basic configuration, a one-position LED illumination base is available. A life cycle of over 60,000 hours significantly reduces operation costs.

SZX7

Stereo Microscope System

The SZX7 stereo microscope's Galilean optical system offers excellent image quality, especially when using a digital microscope camera. The microscope is designed for life science imaging applications with high color fidelity optics, a 7:1 zoom ratio, and a universal LED stand.

Optical system	Galilean type optical system
Zoom microscope body	Zoom range 0.8X – 5.6X (zoom ratio 1:7), Lead-free
Observation tube	1. SZX-BI45: 45° binocular, 45° inclination 2. SZX2-TR30: 30° trinocular, 30° inclination 3. SZX2-TR30PT: 30° trinocular, 30° inclination 4. SZX2-LTTR: Ergonomic long tilting trinocular, 5 – 45° variable inclination All observation tubes: Lead-free Interpupillary distance adjustable range: 50 – 76 mm
Extendable eyepoint adjuster	SZX2-EEPA: Height adjustment range: 30 – 150 mm (with a scale attached)
Objective	DFPL0.5X-4, DFPL0.75X-4, DFPLAPO1X-4, SZX-ACH1X, DFPLAPO1.25X, SZX-ACH1.25X-2, DFPL1.5X-4, DFPL2X-4
Eyepieces	WHSZ series
Dimensions (W × D × H)	194 mm × 253 mm × 403 mm (Standard Set Configuration)

*Please refer to SZX7 catalog for further details

SZ61/SZ51

Zoom Stereo Microscope

SZ61/SZ51

SZ61TR

SZ61-60/SZ51-60

These compact stereo microscopes help you remain comfortable with eyepieces that reduce eyestrain, a universal LED stand that provides easy access to your sample, and a Greenough optical system that delivers excellent flatness. High color fidelity and antistatic materials and coatings make these microscopes suitable for routine or advanced life science applications.

	SZ61	SZ61-60	SZ61TR	SZ51	SZ51-60
Optical system	Greenough type optical system				
Zoom ratio	1:6.7			1:5	
Working distance	110 mm				
Tube inclination angle	45°	60°	45°		60°
Video camera adaptability	–		C-mount (0.5X built in)	–	
Optical component	Lead-free				
Auxiliary objective	Mounting by screwing into the thread at the bottom of frame (M48 threadx0.75)				
Eyepieces	WHSZ series				
Dimensions (W × D × H)	194 mm × 253 mm × 368 mm (Standard Set Configuration)				

*Please refer to SZ61/SZ51 catalog for further details

SZX/SZ Accessories

SZ2-ILST

LED illuminator stand

This LED stand features a thin design to keep sample positions low and optimize operability. Simultaneous transmitted and reflected light are available on this stand. LED light offers a long lifespan and constant color temperature at any intensity.

SZ2-ILA

Transmitted illumination attachment

Used with the SZ2-ST stand, this cost-effective illumination stand offers bright, uniform illumination from low to high magnifications. A tiltable mirror provides direct and oblique illumination for low-contrast specimen. The available 6 W and 100 W lamphouses deliver the necessary power for various illumination needs.

SZ2-CLGDI

Dual interlock light guide

Standard oblique semi-rigid fiber optic light guide. The light source position on the rear side of the stand saves desk space.

SZ2-CLGSF

Flexible light guide

A single fiber optic guide is fixed at the back of the objective so as not to disturb microscope operation.

MVX10

Research Macro Zoom Microscope

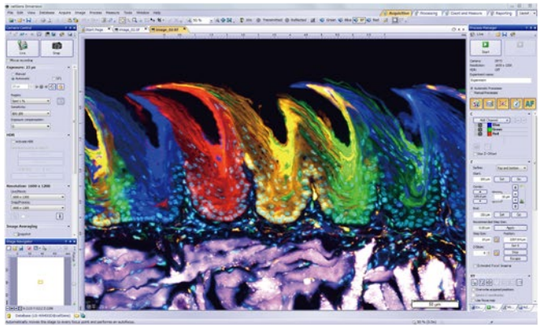
Designed for high fluorescence efficiency, the MVX10 macro microscope offers flexibility for researchers interested in the impact of gene expression and protein function at the cellular level or within whole tissues, organs, and organisms. The system enables seamless observation of bright fluorescence images from macro to micro and provides excellent brightness, resolution, and precision.

Zoom microscope body MVX-ZB10	Optical system	Mono-zoom variable magnification system		
	Zoom range	0.63X – 6.3X (zoom ratio 1:10)		
	Aperture iris diaphragm	Built-in		
Observation head MVX-TTRS	Features	Tilting binocular head that allows switching between standard and stereo observation		
	Field number (FN)	22		
	Tilting angle	0 – 23° continuously variable system		
	Light path selection	2-step binocular 100%/photo 100%		
Reflected light fluorescence unit MVX-RFA	Illumination mode	Coaxial reflected light		
	Filter selection	Turret 3 filter + BF		
	Fluorescence mirror unit	For CFP, GFP, YFP, RFP separation high quality mirror unit		
	Light source	100 W mercury APO lamp housing and power source, 100 W mercury lamp housing and power source, or LED and LDP light source		
Magnification changer MVX-CA2X	Magnification	1X, 2X selection		
Objectives (when used with eyepiece WHN10X)		MVPLAPO 0.63X	MVPLAPO 1X	MVPLAPO 2XC
	Total magnification	4.0 – 40X	6.3 – 63X	12.5 – 125X
	Working distance (W.D.)	87 mm	65 mm	20 mm
	Numerical aperture (NA)	0.15	0.25	0.5
	Field of view	55 – 5.5 mm	34.9 – 3.5 mm	17.6 – 1.7 mm
Stands, transmitted illuminators	Stands, transmitted illuminators	High-level transmitted light illumination base SZX2-ILLB, Brightfield/darkfield transmitted light illumination base SZX2-ILLD, Large stand SZX2-STL		
	Focusing unit	Fine focusing unit SZX2-FOFH, motorized focusing unit SZX2-FOA		
	Stage	Large stage plate, thermoplate, CO2 incubator		

*Please refer to MVX10 catalog for further details

cellSens

Imaging Software



TruAI™ module: Deep-learning technology to improve your image analysis. From automatic segmentation of complex morphologies without hand labeling to segmentation of cells or organelles using a simple transmitted-light image, deep-learning technology offers improved speed and efficiency.

NetCam image sharing solution: Maintain your distance without sacrificing image quality. Colleagues working outside the lab can securely view your images* in real time with full HD resolution (1920 × 1080 pixels).

*For clients outside of your institute network, NAT (Network Address Translation) or IP forwarding is needed to assign a global IP for attendees.

cellSens imaging software adapts to your workflow and evolving research needs by giving you full control over the display and placement of icons, toolbars, and controls. Choose from three packages:

- Entry provides simple image acquisition
- Standard is designed for more advanced imaging acquisition, basic measurements, and documentation
- Dimension offers full control over the complete workflow from image capture to analysis and reporting.

cellSens functions		Dimension	Standard	Entry
Layout	User experience customization	✓	✓	✓
View	Overlay multiple images	✓	✓	
	Tile view (multiple images in a single data set shown side by side)	✓	✓	✓
	Slice view for orthogonal plane viewing 3D or time-lapse data sets	✓		
Image acquisition	Snap/Movie acquisition	✓	✓	✓
	Multi-dimensional (xyzt and wavelength)	✓		
	Automated multiple image alignment (requires motorized stage)	Multiposition		
	Instantly create EFI image (manual or motorized Z)	✓	Manual process	
Image processing	Geometry/combine/filter processing	✓	✓	
	Fluorescence unmixing	✓		
	3D deconvolution (constrained iterative deconvolution)	CI Deconvolution		
Image analysis	Region and line measurements	✓	✓	
	Object analysis and classification	Count & Measure		
	Colocalization	✓		
Deep Learning	Training of Neural Networks	Deep Learning	Deep Learning	
	Inference using trained Neural Networks (offline/online)	Deep Learning or Count & Measure	Deep Learning or Count & Measure	
Documentation and collaboration	Automatically compose Word reports	✓		
	Database image and data management solution or microscopy	Database Core	Database Core	

*Please refer to cellSens catalog for further details

Not for clinical diagnostic use.

NoviSight

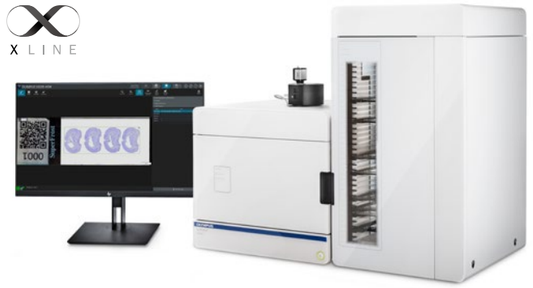
3D Cell Analysis Software

NoviSight 3D cell analysis software advances the drug discovery process by providing statistical data for spheroids and other 3D objects in microplate-based experiments. The software enables you to quantify cell activity in three dimensions and more easily capture rare cell events, obtain accurate cell counts, and improve detection sensitivity. With a convenient user interface, NoviSight software offers the tools you need for recognition, analysis, and statistics.

Image format	OIR format, VSI format
Applicable containers	Microplate: 6, 12, 24, 48, 96, 384 wells
Save format	Dedicated (oxaf), FCS, and CSV
Convertible image format	TIFF
Image view	2D view (single/three sides/MIP)
	3D view (isosurface/MIP/alpha blend)
Graph view	Histogram, scattergram
Analysis/statistics	Various morphological measurements, table view, gating, gallery
Options	Recognition, measurement, statistics

SLIDEVIEW VS200

Research Slide Scanner



Slide Loader Version

The SLIDEVIEW VS200 research slide scanner is designed to capture high-resolution images of your slides for quantitative analysis. The system offers even illumination and uses X Line high-performance objectives for better resolution and flatness. Fast batch scanning, a simplified workflow, and flexible imaging capabilities help you achieve more in less time.

Intended Specimen	Observable Specimen	Glass slide with cover glass
	Size Options for Glass Slides	Width: 25 mm – 26 mm, length: 75 mm – 76 mm, thickness: 0.8 mm – 1.4 mm
	Size of Cover Glass	Thickness: 0.12 mm – 0.17 mm
Microscope Frame	Illuminator	Built-in Köhler illumination for transmitted light
	Objectives (* option)	2X, 10X, 20X, 40X, 60X*1 and 100X*1 oil immersion with a motorized revolving nosepiece
	Motorized Stage	Motorized XY stage with automatic control
	Focusing	Motorized automatic control
	Fluorescence Observation (Option)	Motorized fluorescence illuminator, motorized filter wheel, fluorescence light source, digital monochrome camera
Digital Camera	CCD Camera	2/3" CCD camera, 3.45 µm × 3.45 µm pixel size, high sensitivity, high resolution
	Image Correction	Shading correction, auto white balance
Scan	Scan Area	26 mm (W) × 64 mm (H) (Slide glass size: 26 mm (W) × 76 mm (H))
	Pixel Resolution * This value is length per pixel of the specimen surface.	20X (NA 0.75): 0.33 µm/pixel 40X (NA 0.95): 0.17 µm/pixel 60X oil immersion (option, NA 1.35): 0.11 µm/pixel 100X oil immersion (option, NA 1.4): 0.07 µm/pixel
	Scan Time	Approx. 2 min. (20X objective, scan area 15 mm × 15 mm)

*1 60X and 100X objectives are not available in some areas.

*Please refer to VS200 catalog for further details

Not for clinical diagnostic use.

DP74

Microscope Digital Camera

The DP74 color camera combines high image quality and smart guidance for faster and more comfortable imaging. The camera offers one of the widest fields of view available, delivers images at a full 60 frames per second, and accurately reproduces the colors of stains and samples. Auto adjustment of camera settings helps you easily produce publication-quality images, while the position navigator makes discussions simpler by pinpointing your location on the sample.

Camera type		Single chip color CCD (pixel shifting) Cooling system: Peltier device (max. Ta -10 ºC)
Image sensor	Size	1/1.8 inch 2.01 megapixels color CCD
	Scanning mode	Progressive scan
Camera mount		C-mount
Effective image resolution		4800 × 3600 (pixel shifting, 3-CCD mode) 2400 × 1800 (pixel shifting, 3-CCD mode) 1600 × 1200 (1 × 1, 3-CCD mode) 800 × 600 (1 × 1) 800 × 600 (2 × 2) 340 × 250 (4 × 4) ROI
ISO Sensitivity		ISO 100/200/400/800/1600
A/D		14 bit (effective pixel : 12 bit@16 bit mode image)
Live frame rate		1600 × 1200 (1 × 1): 15 fps 800 × 600 (1 × 1): 15 fps 800 × 600 (2 × 2): 27 fps

* Please refer to DP73 catalog for further details

Not for clinical diagnostic use.

DP28

Microscope Digital Camera

The DP28 camera combines powerful features, precise color accuracy, and 4K resolution across a wide field of view to provide stunning images for conferencing, teaching, and clinical research. 4K image resolution creates images on the screen that look exactly as they appear through the microscope's eyepieces, so you know you're not missing details or data. From image capture to collaboration, smart camera and software features simplify and accelerate your workflow.

Camera type		Single chip color CCD camera	
Image sensor	Size	2/3 inch color CCD	
	Effective pixels	5.05 megapixels (total: 5.24 megapixels)	
	Scanning mode	Progressive scan	
	Color filter	RGB Bayer primary color filter	
	Recording range	8.45 mm (H) × 6.62 mm (V) 10.733 mm (diagonal length)	
	Maximum recorded pixels	4.7 megapixels (2448 × 1920)	
Camera mount		C-mount	
ISO Sensitivity		Equivalent to ISO 100/200/400	
		PC connection	Stand-alone
Image size (file format)		2448 × 1920 1920 × 1080 1224 × 960 According to cellSens specifications	TIFF JPEG-LOW (Compression ratio 1/2.7) JPEG-HIGH (Compression ratio 1/8) 2448 × 1920 1920 × 1080 1224 × 960 Movie (AVI) 1224 × 960
Live image display (frame rate)		15 fps (2448 × 1920) 22 fps (1920 × 1080) 30 fps (1224 × 960)	15 fps (2448 × 1920) 22 fps (1920 × 1080) 30 fps (1224 × 960)

* Please refer to DP28 catalog for further details

Not for clinical diagnostic use.

DP23

Microscope Digital Camera

The DP23 camera is easy to use for routine life science and clinical research imaging. The camera offers smooth live images, easy precision focusing, and clear images of dim samples. Image capture is made even easier with Olympus Smart Image Averaging (OSIA), which automatically maximizes the camera's image quality with no adjustments. Like all DP series cameras, the DP23 camera provides reliable color reproduction to show samples in their natural colors.

Camera type		C-mount CCD camera head	
Image sensor	Size	1/1.8 inch color CCD	
	Effective pixels	2.83 million pixels (total pixels: 2.98 million pixels)	
	Scanning mode	Progressive scan	
	Color filter	RGB primary color on-chip filters	
	Recording range	7.08 mm (H) × 5.31 mm (V), 8.8 mm (diagonal length)	
	Maximum recorded pixels	2.76 megapixels (1920 × 1440)	
Camera mount		C-mount	
ISO Sensitivity		Equivalent to ISO 200/400/800	
		Stand-alone	PC connection
Image size (file format)		TIFF JPEG-LOW (Compression ratio 1/2.7) JPEG-HIGH (Compression ratio 1/8) 1920 × 1440 1920 × 1080 960 × 720 Video recording pixels: AVI 960 × 720	1920 × 1440 1920 × 1080 960 × 720 File format according to cellSens specifications
Live image display (frame rate)		25 fps (1920 × 1440) 25 fps (960 × 720) 30 fps (1920 × 1080)	25 fps (1920 × 1440) 25 fps (960 × 720) 28 fps (1920 × 1080)

* Please refer to DP23 catalog for further details

Not for clinical diagnostic use.

X Line

High-Performance Objectives

X Line objectives are our most advanced lenses for general clinical and research applications. Thanks to novel manufacturing technology, X Line objectives offer improved optical performance in three critical areas—a larger numerical aperture (NA), better image flatness, and a wider range of chromatic correction. These advances enable high-quality, large field of view (FOV) imaging for versatility in numerous applications.

UPLXAPO

Extended Apochromat Objectives

The UPLXAPO extended apochromat objectives have a high numerical aperture (NA), wide homogeneous image flatness, and an extended range of chromatic aberration compensation from 400–1000 nm. These features enable you to acquire high-resolution, bright images for a wide range of applications from brightfield/fluorescence microscopy to confocal/super resolution microscopy.

UPLXAPO-PH

Extended Apochromat Objectives for Phase Contrast

The UPLXAPO-PH extended apochromat phase-contrast objectives provide a high NA, wide homogeneous image flatness, and an extended range of chromatic aberration compensation from 400–1000 nm. These objectives are used for observing transparent and colorless specimens such as live cells, biological tissues, and microorganisms with phase contrast and fluorescence imaging.

A Line

Application-Driven Objectives

A Line objectives are engineered to improve your imaging for specific applications, such as TIRF microscopy, live super resolution imaging, and multiphoton imaging. Most A Line objectives have high numerical apertures (NAs) and correction collars that enable you to compensate for spherical aberration, enhancing image resolution and contrast. By pairing A Line objectives with the right equipment, you can enhance imaging performance further.

XLPLN-MP/XLSLPLN-MP

Multiphoton Excitation Dedicated Objectives

Designed to achieve optimal performance during multiphoton excitation (MPE) imaging of in vivo and transparent samples, these objectives enable high-precision imaging to a depth of 8 mm.

UPLSAPO-S/UPLSAPO-W

Silicone Immersion Objectives

Silicone immersion objectives are optimized for live cell and live tissue imaging. By properly matching the refractive index, images are clearer and brighter, and time-lapse observations become more reliable and less complex because silicone oil does not dry at 37 °C (98.6 °F).

PLAPON-SC

Super-Corrected Objective

The super-corrected 60X OSC objective corrects for a broad range of color aberration to provide images that capture fluorescence in the proper location. Save time and resources in multicolor labeling experiments without having to go through post-processing adjustments.

APON-TIRF/UAPON-TIRF/ UPLAPO-HR

High-Resolution Objectives for Super Resolution / TIRF

A high NA is important for super resolution or total internal reflection fluorescence (TIRF) microscopy. Olympus is a pioneer in TIRF microscopy, and we offer a broad lineup of objectives with numerical apertures ranging from 1.45 to 1.7 and magnifications ranging from 60X to 150X.

UIS2 Objective specifications

UIS2 objective		NA	W.D. (mm)	FN	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	For upright microscope	For inverted microscope
XAPO	UPLXAPO 4X	0.16	13	26.5	—					✓	✓
	UPLXAPO 10X2	0.40	3.1	26.5	0.17					✓	✓
	UPLXAPO 20X	0.75	0.6	26.5	0.17		✓			✓	✓
	UPLXAPO 20XO	0.85	0.17	26.5	—	Oil	✓			✓	✓
	UPLSAPO 30XS	1.05	0.8	22	0.13 – 0.19	Silicone		✓		✓	✓
	UPLSAPO-S/SIR	1.05	0.8	22	0.13 – 0.19	Silicone		✓		✓	✓
	UPLXAPO 40X2	0.95	0.18	26.5	0.11 – 0.23		✓	✓		✓	✓
	UPLSAPO 40XS	1.25	0.3	22	0.13 – 0.19	Silicone	✓	✓		✓	✓
	UPLSAPO 60XW	1.20	0.28	26.5	0.13 – 0.21	Water	✓	✓		✓	✓
	UPLXAPO 60XO	1.35	0.15	26.5	0.17	Oil	✓			✓	✓
	UPLSAPO 60XS2	1.30	0.3	22	0.15 – 0.19	Silicone	✓	✓		✓	✓
	UPLXAPO 100XO	1.40	0.13	26.5	0.17	Oil	✓			✓	✓
	UPLXAPO 100XOPH	1.40	0.13	26.5	0.17	Oil	✓			✓	✓
	UPLSAPO 100XS	1.35	0.2	22	0.13 – 0.19	Silicone	✓	✓		✓	✓
PLAPON	PLAPON 1.25X	0.04	5	26.5	—					✓	
	PLAPON 2X	0.08	6.2	26.5	—					✓	
	PLAPON 60XO	1.42	0.15	26.5	0.17	Oil	✓			✓	✓
	PLAPON 60XOSC2	1.40	0.12	22	0.17	Oil	✓			✓	✓
	PLAPON 60XOPH	1.42	0.15	26.5	0.17	Oil	✓			✓	✓
UPLFLN	UPLFLN 4X	0.13	17	26.5	—					✓	✓
	UPLFLN 10X2	0.30	10	26.5	—					✓	✓
	UPLFLN 20X	0.50	2.1	26.5	0.17		✓			✓	✓
	UPLFLN 40X	0.75	0.51	26.5	0.17		✓			✓	✓
	UPLFLN 40XO	1.30	0.2	26.5	0.17	Oil	✓			✓	✓
	UPLFLN 60X	0.90	0.2	26.5	0.11 – 0.23		✓	✓		✓	✓
	UPLFLN 60XOI	1.25 – 0.65	0.12	26.5	0.17	Oil	✓		✓	✓	✓
	UPLFLN 100XO2	1.30	0.2	26.5	0.17	Oil	✓			✓	✓
	UPLFLN 100XOI2	1.30 – 0.60	0.2	26.5	0.17	Oil	✓		✓	✓	✓
PLFLN	PLFLN 100X	0.95	0.2	26.5	0.14 – 0.2		✓	✓		✓	✓
UCPLFLN	UCPLFLN 20X	0.70	0.8 – 1.8	22	0 – 1.6			✓			✓
	UCPLFLN 20XPH	0.70	0.8 – 1.8	22	0 – 1.6			✓			✓
UPLFLN-PH	UPLFLN 4XPH	0.13	17	26.5	—						✓
	UPLFLN 10X2PH	0.30	10	26.5	—					✓	✓
	UPLFLN 20XPH	0.50	2.1	26.5	0.17		✓			✓	✓
	UPLFLN 40XPH	0.75	0.51	26.5	0.17		✓			✓	✓
	UPLFLN 60XOIPH	1.25 – 0.65	0.12	26.5	0.17	Oil	✓			✓	✓
	UPLFLN 100XO2PH	1.30	0.2	26.5	0.17	Oil	✓			✓	✓
UPLFLN-IPC	UPLFLN 4XIPC	0.13	16.4	22	1						✓
UPLFLN-P	UPLFLN 4XP	0.13	17	26.5	—					✓	
	UPLFLN 10XP	0.30	10	26.5	—					✓	
	UPLFLN 20XP	0.50	2.1	26.5	0.17		✓			✓	
	UPLFLN 40XP	0.75	0.51	26.5	0.17		✓			✓	
	UPLFLN 100XOP	1.30	0.2	26.5	0.17	Oil	✓			✓	
PLN	PLN 2X	0.06	5.8	22	—					✓	
	PLN 4X	0.10	18.5	22	—					✓	
	PLN 10X	0.25	10.6	22	—					✓	
	PLN 20X	0.40	1.2	22	0.17		✓			✓	
	PLN 40X	0.65	0.6	22	0.17		✓			✓	
	PLN 50XOI	0.90 – 0.50	0.2	22	—	Oil	✓		✓	✓	
	PLN 100XO	1.25	0.15	22	—	Oil	✓			✓	
PLN-PH	PLN 10XPH	0.25	10.6	22	—					✓	
	PLN 20XPH	0.40	1.2	22	0.17					✓	
	PLN 40XPH	0.65	0.6	22	0.17		✓			✓	
	PLN 100XOPH	1.25	0.15	22	—	Oil	✓			✓	
PLN & ACHN-P	PLN 4XP	0.10	18.5	22	—					✓	
	ACHN 10XP	0.25	6	22	—					✓	
	ACHN 20XP	0.40	3	22	0.17					✓	
	ACHN 40XP	0.65	0.45	22	0.17		✓			✓	
	ACHN 100XOP	1.25	0.13	22	—	Oil	✓			✓	
PLFLN-CY	PLFLN 10XCY	0.30	10	26.5	—					✓	

UIS2 objective		NA	W.D. (mm)	FN	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	For upright microscope	For inverted microscope
PLN-CY	PLN 2XCY	0.06	5.8	22	—					✓	
	PLN 4XCY	0.10	18.5	22	—					✓	
	PLN 10XCY	0.25	10.6	22	—					✓	
	PLN 20XCY	0.40	1.2	22	0.17		✓			✓	
LUCPLFLN	LUCPLFLN 20X	0.45	6.6 – 7.8	22	0 – 2			✓			✓
	LUCPLFLN 40X	0.60	2.7 – 4	22	0 – 2			✓			✓
	LUCPLFLN 60X	0.70	1.5 – 2.2	22	0.1 – 1.3			✓			✓
	LUCPLFLN 20XPH	0.45	6.6 – 7.8	22	0 – 2			✓			✓
	LUCPLFLN 20XRC	0.45	6.6 – 7.8	22	0 – 2			✓			✓
	LUCPLFLN 40XPH	0.60	3.0 – 4.2	22	0 – 2			✓			✓
	LUCPLFLN 40XRC	0.60	3.0 – 4.2	22	0 – 2			✓			✓
	LUCPLFLN 60XPH	0.70	1.5 – 2.2	22	0.1 – 1.3			✓			✓
CPLFLN	CPLFLN 10XPH	0.30	9.5	22	1						✓
	CPLFLN 10XRC	0.30	9	22	1.5						✓
LCACHN	LCACHN 20XPH	0.40	3.2	22	1						✓
	LCACHN 20XIPC	0.40	3.2	22	1						✓
	LCACHN 20XRC	0.40	2.8	22	1.5						✓
	LCACHN 40XPH	0.55	2.2	22	1						✓
	LCACHN 40XPHP	0.55	2.2	22	1						✓
	LCACHN40XIPC	0.55	2.2	22	1						✓
	LCACHN 40XRC	0.55	1.9	22	1.5						✓
CACHN & CPLN	CACHN 10XIPC	0.25	8.8	22	1						✓
	CPLN 10XPH	0.25	10	22	1						✓
	CPLN 10XRC	0.25	9.7	22	1.5						✓
LUMPLFLN-W	UMPLFLN 10XW	0.30	3.5	26.5	—	Water				✓	
	UMPLFLN 20XW	0.50	3.5	26.5	0	Water				✓	
	LUMPLFLN 40XW	0.80	3.3	26.5	0	Water				✓	
	LUMPLFLN 60XW	1.00	2	26.5	0	Water				✓	
	LUMFLN 60XW	1.10	1.5	26.5	0	Water		✓		✓	
XLUMPLFLN-W	ULMPLFLN 20XW	1.00	2	22	0	Water				✓	
No cover objective	MPLAPON 60X	0.90	0.4	26.5	0		✓			✓	
	MPLAPON 100XO	1.40	0.1	26.5	0	Oil	✓			✓	
	MPLFLN 20X	0.45	3.1	26.5	0					✓	
	MPLFLN 40X	0.75	0.63	26.5	0					✓	
	MPLFLN 100X	0.90	1	26.5	0		✓			✓	
UAPON 340	UAPON 20XW340	0.70	0.35	22	0.17	Water	✓			✓	✓
	UAPON 40XO340-2	1.35	0.1	22	0.17	Oil	✓			✓	✓
	UAPON 40XW340	1.15	0.25	22	0.13 – 0.25	Water	✓	✓		✓	✓
TIRF	APON 60XOTIRF	1.49	0.1	22	0.13 – 0.19	Oil		✓		✓	✓
	APON 100XHOTIRF*	1.70	0.08	22	0.15	Oil		✓		✓	✓
	UAPON 100XOTIRF	1.49	0.1	22	0.13 – 0.19	Oil		✓		✓	✓
	UAPON 150XOTIRF	1.45	0.08	22	0.13 – 0.19	Oil		✓		✓	✓

* HIGHINDEX-CG cover glass and dedicated immersion oil required.

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A high-power view of gastric mucosa with H. pylori infection
Yuichi Ishikawa, M.D., Ph.D.,
Division of Pathology, The Cancer Institute,
Japanese Foundation for Cancer Research
(left, cover page)

Kei Ito, Ph.D.
Institute of Molecular and Cellular Biosciences,
University of Tokyo
(middle, cover page)

“Brainbow” mouse brain stem
The laboratories of Jeff W. Lichtman and Joshua R. Sanes,
Harvard University MCB Department and the Center for Brain Science
(right, cover page)

Drosophila, Stage 14
Dr. Tetsuya Kojima,
Laboratory of Innovational Biology,
Department of Integrated Biosciences Graduate School of Frontier Sciences, University of Tokyo
(far left, page 1; upper, page 4)

Rainbow mouse (Each interpapillary pit of the tongue is occupied by single-color cells that originate from monoclonal stem cells.)
Hiroo Ueno, Ph.D.
Department of Stem Cell Pathology, Kansai Medical University
(upper, page 17)

The islet of insulin-deficient diabetic mouse, DAPI (blue), insulin (red)
Daisuke Sakano, Ph.D., Shoen Kume, Ph.D.
Department of Stem Cell Biology, Institute of Molecular Embryology and Genetics,
Kumamoto University
(lower, page 17)

NRK-52E Cells (Alexa Fluor 488/Alexa Fluor 546)

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