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System Microscope

BX63/BX53

BX3 Series

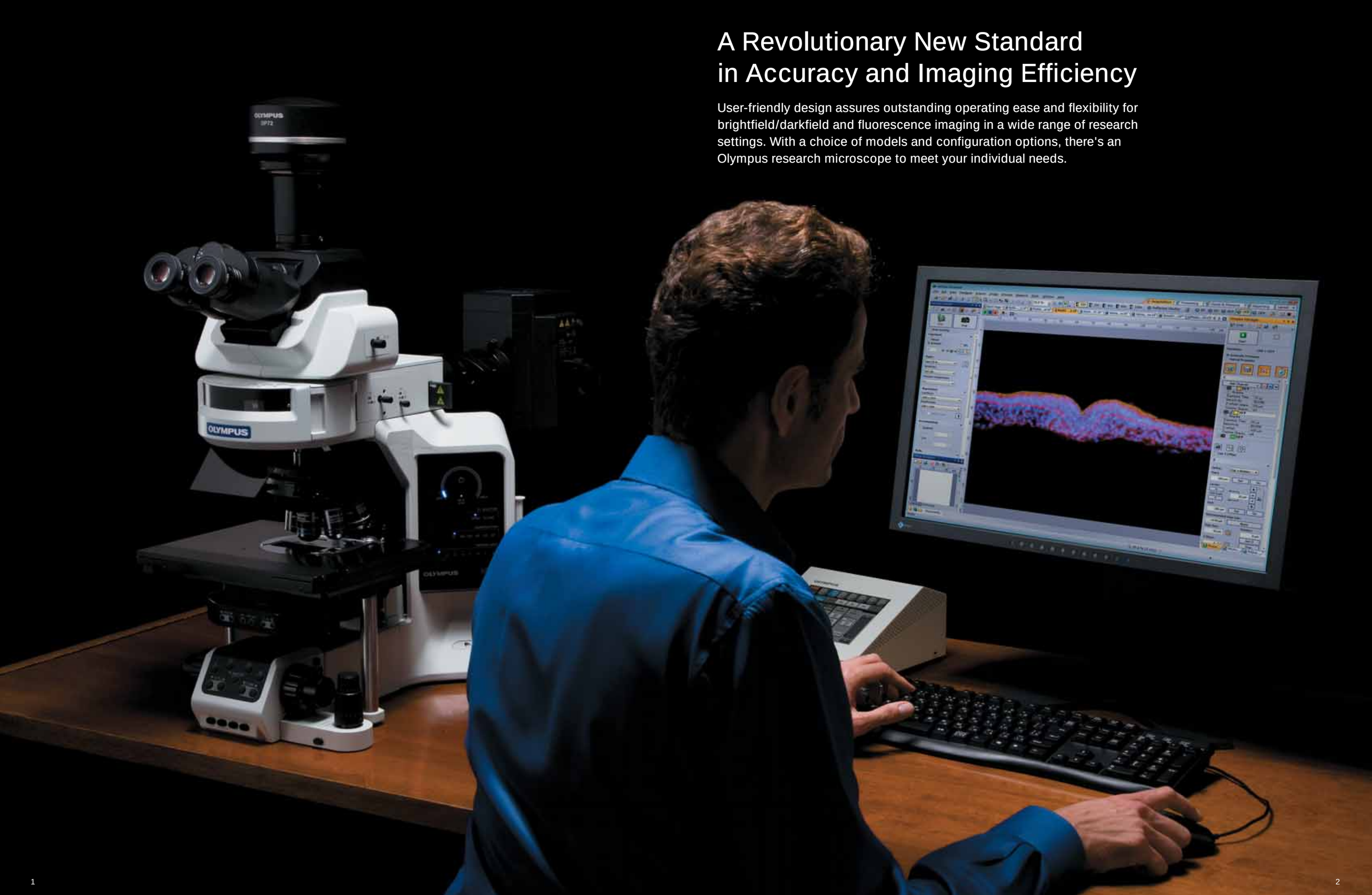
NEW

A Clear Edge in Imaging

UIS2
World-leading optics

A Revolutionary New Standard in Accuracy and Imaging Efficiency

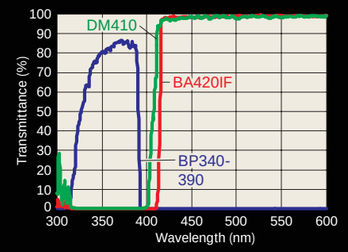
User-friendly design assures outstanding operating ease and flexibility for brightfield/darkfield and fluorescence imaging in a wide range of research settings. With a choice of models and configuration options, there's an Olympus research microscope to meet your individual needs.



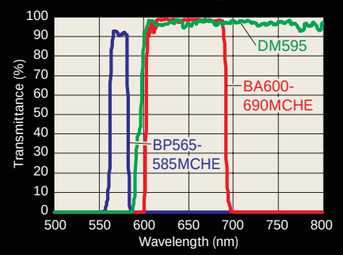
Accuracy

High-sensitivity fluorescence detection enables bright, high-contrast imaging with minimal exposure of cells to excitation light. Advanced Olympus technologies also reduce stray light and autofluorescence to assure a high S/N ratio.

U-FUW

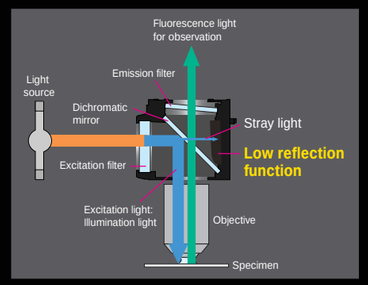


U-FMCHE



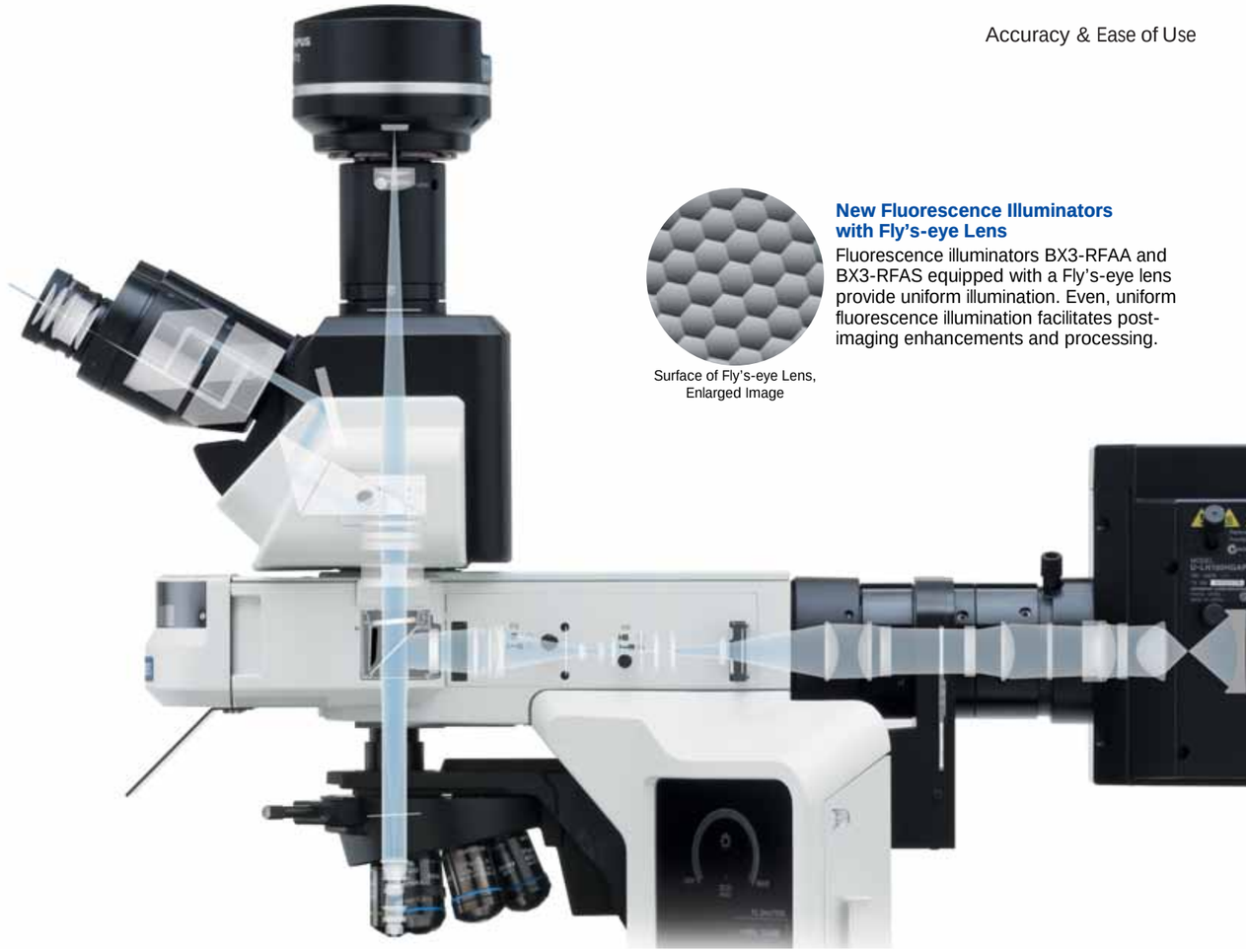
Fluorescent Mirror Units with the Latest Coating Technology

Olympus applies an outstanding filter coating technology to all fluorescence mirror units in order to produce high transmissions, sharp cut-offs and efficient detections of fluorescence.



Stray Light Reduction Equipped on All Mirror Units

The low reflection function eliminates over 99% of stray light, producing a high S/N ratio.



Surface of Fly's-eye Lens, Enlarged Image

New Fluorescence Illuminators with Fly's-eye Lens

Fluorescence illuminators BX3-RFAA and BX3-RFAS equipped with a Fly's-eye lens provide uniform illumination. Even, uniform fluorescence illumination facilitates post-imaging enhancements and processing.

High Transmission Objectives with Reduced Autofluorescence

Olympus UIS2 objectives are made with superior low-autofluorescence glass, anti-reflection coats, and lens joining materials, improving the S/N ratio. Effective detections of subtle fluorescence emissions even with weak excitation light deliver ideal performance in fluorescence imaging.

Condenser Design to Reduce Back-reflections

The motorized universal condenser is designed to reduce back-reflections and autofluorescence by swinging its top lens out, automatically closing its diaphragm to the minimum, and locating the wheel in between two positions.

Motorized Sensors with Power-off Functions

The sensor for the motorized fluorescence illuminator BX3-RFAA turns the light on only upon mirror unit changeover commands, and turns it off as soon as the command is completed. This function assures that stray light from the sensor is terminated during observation.

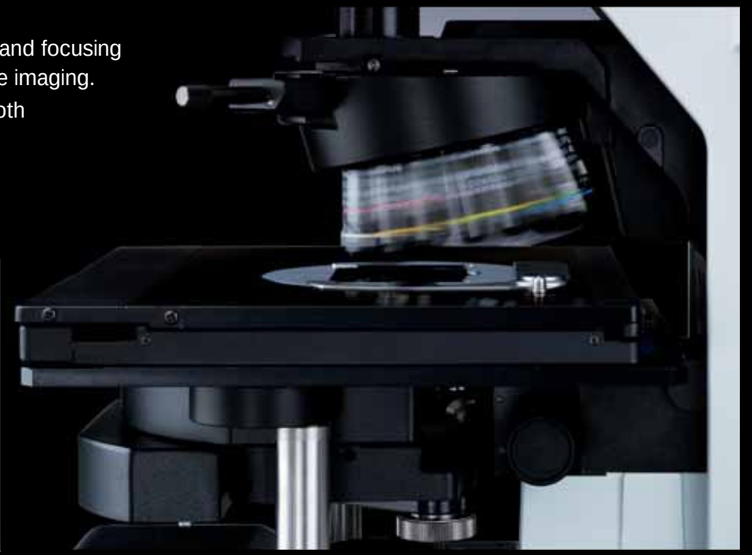
Low Autofluorescence Immersion Oil

This immersion oil is specifically designed to reduce the autofluorescence normally associated with such oils, for improved S/N ratio. Insusceptible to crystallization, it is an ideal oil for long time observations.

Reliability and Precision in an Easy-to-use Package

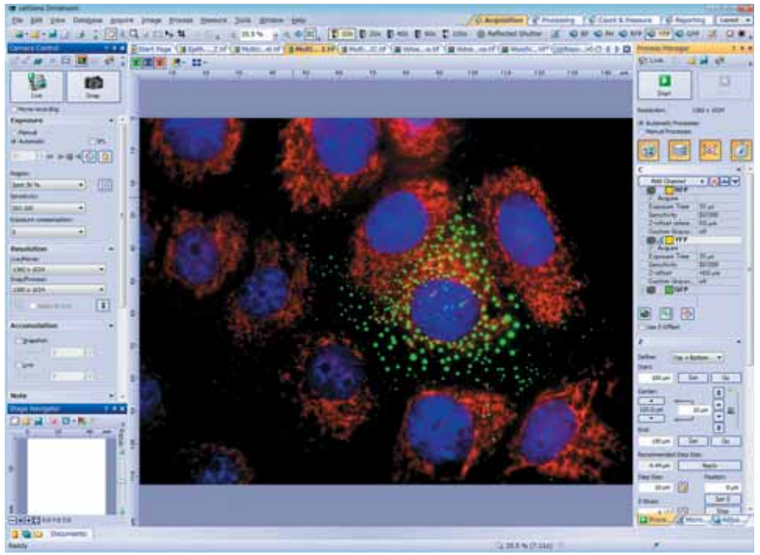
Upgraded Accuracy

The BX63 microscope features a fixed stage and focusing nosepiece for maximum stability and accurate imaging.
An ultrasonic drive system enables fine, smooth control of specimen position.



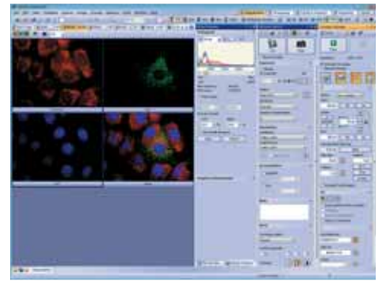
Accuracy

Ease of Use



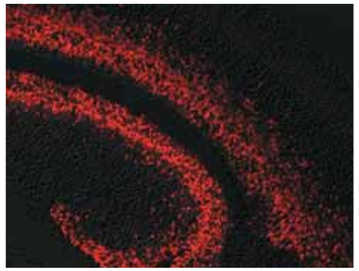
Effortless Imaging

The cellSens software allows researchers to perform effortless imaging.

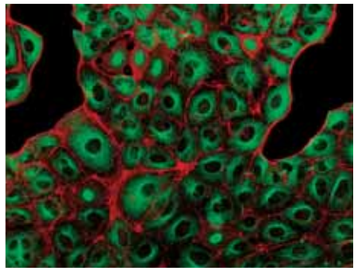


Further Fluency in Fluorescence Integration

The Olympus 8-position fluorescence illuminator allows flexible responses to various fluorescence specimens, with easily replaceable mirror units. Observations are accelerated further with less need for changing mirror units for specimens such as multi-colors and FISH.



Brain section of mouse at embryonic day 15 (Cy3)



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

BX63

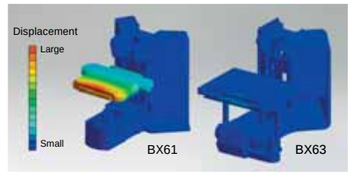
Intelligent Design for Maximum Configuration Flexibility and Operating Ease

The BX63 offers outstanding stability and imaging precision for research applications, with the convenience of a touch screen interface for easy operation. Additionally, it features a detachable controller that can be positioned to suit the operator's preference or workflow requirements.

Intelligent Microscope BX63 +
Digital Camera DP72

Stability for Improved Imaging Reliability

The Olympus BX63 is the choice for today's motorized microscope.
By incorporating a motorized nosepiece and securely fastening the stage on three points, the microscope is even more stabilized.
The smooth, high-precision drive of the fixed ultrasonic stage reduces vibrations, further advancing the quality of image acquisition.



Stability Simulation in Comparison to BX61

Intuitive Touch Panel Controller for Enhanced Workspace and Workflow Flexibility

Programmable controls greatly simplify repetitive observation and imaging tasks.
In Navigation mode, the interface is context-sensitive, and displays only the functions that are relevant to the currently selected observation method.
In Full Operation mode, it allows researchers access to the full range of functions and customization options available.

Touch Panel Controller

The Detachable Controller Customizes Workspace into an Efficient Microscope Workstation

The controller U-MCZ can be removed and attached anywhere on the microscope, enabling the researcher to create a working environment all his/her own.
The XY-controller of the ultrasonic stage can also be attached to the user's preferred side, allowing the simultaneous operation of the controller and the mouse.
The controller's functionally-placed switches simplify observation method/objective/mirror unit changeovers, light intensity adjustments and live/archive image selections.

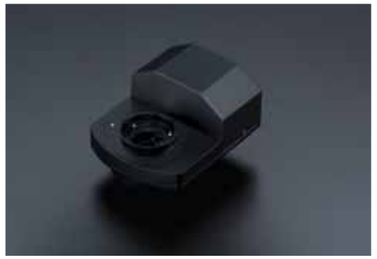
U-MCZ
+BX3-SSU Ultrasonic Stage XY-controller
Configuration

Motorized Units Facilitate Operations

With the BX63, a diverse lineup of motorized units are available. The researcher has a choice of three controls—the touch panel controller, the controller/U-MCZ, or the imaging software cellSens—for his/her observation method settings, microscopic operations and digital imaging. Observations are made so much faster and simpler, thanks to the interlocked motorized units working together to satisfy even the most demanding applications.

Motorized Fluorescence Illuminator/ BX3-RFAA

The flexibility of the motorized fluorescence illuminator accommodates multi-color stained specimens.
The 8-position mirror units permit quick changeover of fluorescence colors.



Motorized Attenuator Wheel/U-AW

The Olympus BX63 has a motorized ND filter wheel for fluorescence and transmitted light intensity adjustments.

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

Motorized Seven Position Nosepiece/ U-D7REA

Equipped with a DIC slider slot, this revolving nosepiece allows simultaneous attachment of seven objectives. It is especially suitable for continuous observations from low to high magnifications and combining specific objectives, such as polarized light observations.

Microscope Frame Equipped with Motorized Focus and Field Diaphragm

This unit incorporates a high-speed, high-precision motorized focusing nosepiece with 0.1 µm resolution and 20 mm vertical strokes. The field diaphragm adjustment of transmitted light is also motorized.

Motorized Universal Condenser/ BX3-UCD8A

By integrating with designated optical components, the motorized universal condenser accommodates various kinds of transmitted light observation, from brightfield to differential interference contrast and phase contrast.

Scanning Stage with Ultrasonic/ BX3-SSU

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

BX53

A Great Solution for System Flexibility with Comfortable Operability

The BX53 is a versatile system microscope that can be configured to meet virtually any research need. It supports a wide range of fluorescence imaging applications, and has a range of advanced features for enhanced operating ease and process flexibility.

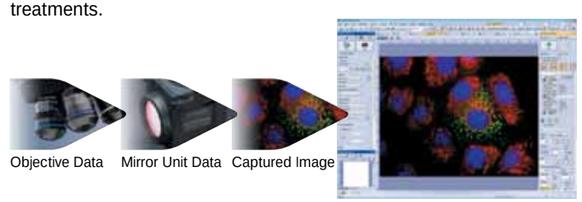
System Microscope BX53 + Digital Camera DP72

Customizable Control Layout

Light intensity now can be controlled with the dial in front, and transmitted filters and fluorescence shutters are operable from either side. Detachable fine focus handle can be attached on either side of the microscope based on operator preference. The BX53 frees the operator to create his/her own working environment with the microscope.

Saves Microscope Information with Coded Units

The imaging software cellSens integrated with the coded fluorescence illuminator BX3-RFAS and the motorized 7-position nosepiece U-D7RES can automatically store fluorescence mirror unit and objective data with the images, facilitating post-imaging treatments.



Imaging Software

Further Ease in Imaging with Multi-stained Specimens

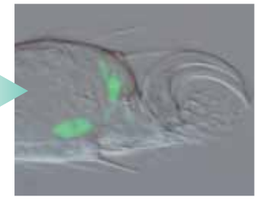
The 8-position fluorescence illuminator allows flexible responses to various fluorescence specimens. Mirror units can easily be replaced.

System Microscope BX53

Automatic Switching of DIC Prisms

Switching objectives on the motorized 7-position revolving nosepiece, integrated with the motorized universal condenser, enables an automatic switch to the optimal DIC prism. Simplified prism switches accelerate observations.

Changing Objectives with Coded Nosepiece, Automatic Switchovers of DIC Elements



Optimum Contrast Observation

Energy Saving Switch Turns off Automatically

The motion sensor detects when an operator leaves and will automatically turn off the transmitted light lamp after around 30 minutes. The energy-saving switch conserves energy and lamp lifetime.

UIS2 Objectives Deliver Optimal Performance in Wider Wavelength Spectrum

■ UPLSAPO Series

Thanks to the application of the original Olympus UW multi-coatings, these Super Apochromat objectives compensate for both spherical and chromatic aberrations from the UV to the near infrared region. Their sensitivity to fluorescence emissions ensures the acquisition of sharp, clear images, without color shift, even in brightfield and Nomarski DIC observations. For quality and performance, they offer solutions for digital imaging needs.

■ UPLFLN (UPLFLN-PH) Series

These plan objectives also provide flat images with high transmission up to the near infrared region of the spectrum. With their high S/N ratio, excellent resolution and high contrast imaging, they are especially effective in brightfield and Nomarski DIC observations. The UPLFLN-PH series is optimized for phase contrast observation.

■ PLAPON Series

Designed for unsurpassed resolution and contrast, these Plan Apochromat objectives keep chromatic aberration down to a minimum.
The PLAPON60XOSC objective has two improvements, chromatic aberration compensation at 405 nm–650 nm and image-forming performance at 405 nm.

■ PLN(PLN-PH) Series

Ideal for a range of biological applications, these high quality objectives feature excellent flatness up to F.N. 22 in transmitted brightfield (phase contrast) observation.
The PLN-PH series is specifically designed for phase contrast work.

UIS2 objectives

Objective	N.A.	W.D. (mm)	F.N.	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	Water proof and oil proof function
UPLSAPO 4X	0.16	13	26.5	—					
UPLSAPO 10X2	0.4	3.1	26.5	0.17					
UPLSAPO 20X	0.75	0.6	26.5	0.17		○			
UPLSAPO 20XO	0.85	0.17	26.5	—	Oil	○			○
UPLSAPO 40X2	0.95	0.18	26.5	0.11-0.23		○	○		
UPLSAPO 60XW	1.20	0.28	26.5	0.15-0.21	Water	○	○		○
UPLSAPO 60XO	1.35	0.15	26.5	0.17	Oil	○			○
UPLSAPO 100XO	1.40	0.13	26.5	0.17	Oil	○			○
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 60XOSC	1.4	0.12	22	0.17	Oil	○			○
UPLFLN 4X	0.13	17	26.5	—					
UPLFLN 10X2	0.3	10	26.5	—					
UPLFLN 20X	0.5	2.1	26.5	0.17		○			
UPLFLN 40X	0.75	0.51	26.5	0.17		○			
UPLFLN 40XO	1.3	0.2	26.5	0.17	Oil	○			○
UPLFLN 60X	0.9	0.2	26.5	0.11-0.23		○	○		
UPLFLN 60XOI	1.25-0.65	0.12	26.5	0.17	Oil	○		○	○
UPLFLN 100XO2	1.3	0.2	26.5	0.17	Oil	○			○
UPLFLN 100XOI2	1.3-0.6	0.2	26.5	0.17	Oil	○		○	○
UPLFLN 10X2PH	0.3	10	26.5	—					
UPLFLN 20XPH	0.5	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	1.3	0.2	26.5	0.17	Oil	○			○
UPLFLN 4XP	0.13	17	26.5	—					
UPLFLN 10XP	0.3	10	26.5	—					
UPLFLN 20XP	0.5	2.1	26.5	0.17		○			
UPLFLN 40XP	0.75	0.51	26.5	0.17		○			
UPLFLN 100XOP	1.3	0.2	26.5	0.17	Oil	○			○

Objective	N.A.	W.D. (mm)	F.N.	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	Water proof and oil proof function
PLN 2X	0.06	5.8	22	—					
PLN 4X	0.1	18.5	22	—					
PLN 10X	0.25	10.6	22	—					
PLN 20X	0.4	1.2	22	0.17		○			
PLN 40X	0.65	0.6	22	0.17		○			
PLN 50XOI	0.9-0.5	0.2	22	—	Oil	○		○	○
PLN 100XO	1.25	0.15	22	—	Oil	○			○
PLN 10XPH	0.25	10.6	22	—					
PLN 20XPH	0.4	1.2	22	0.17		○			
PLN 40XPH	0.65	0.6	22	0.17		○			
PLN 100XOPH	1.25	0.15	22	—	Oil	○			○
PLN 4XP	0.1	18.5	22	—					
ACHN 10XP	0.25	6	22	—					
ACHN 20XP	0.4	3	22	0.17					
ACHN 40XP	0.65	0.45	22	0.17		○			
ACHN 100XOP	1.25	0.13	22	—	Oil	○			○
MPLAPON100X	0.95	0.3	26.5	0					
MPLAPON100XO	1.40	0.1	26.5	0	Oil				○
MPLFLN2.5X	0.08	10.7	26.5	—					
MPLFLN10X	0.30	11	26.5	—					
MPLFLN20X	0.45	3.1	26.5	0					
MPLFLN40X	0.75	0.63	26.5	0					
MPLFLN100X	0.90	1	26.5	0					
MPLN5X	0.10	20	22	—					
UAPON20XW340	0.70	0.35	22	0.17	Water	○			○
UAPON40XO340	1.35	0.1	22	0.17	Oil	○			○
UAPON40XW340	1.15	0.25	22	0.13-0.25	Water	○	○		○

All UIS2 objectives and WHN eyepieces: lead-free eco-glass

UIS objective

Objective	N.A.	W.D. (mm)	F.N.	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	Oil proof cap
PLFL 100X	0.95	0.2	26.5	0.14-0.2		○	○		

Observation Tubes / Eyepoint Adjusters

A wide range of observation tubes is available for the BX3 series, including wide field binocular and trinocular types, various tilting tubes, and tubes for observation of upright images in which the specimen and the observed image move in the same direction.

①U-TTBI/U-ETBI ②U-TTLBI ③U-TTR-2 ④U-SWETR ⑤U-SWETTR-5 ⑥U-BI30-2 ⑦U-TBI-3 ⑧U-TR30-2/U-TR30NIR ⑨U-SWTR-3 ⑩U-TBI-3-CLI ⑪U-ETR-4 ⑫U-EPA2 ⑬U-EPAL-2

Eyepieces

Eyepieces maintain image flatness even when a reflected light illuminator or other intermediate tube is attached. The two available types are F.N. 22 and F.N. 26.5.

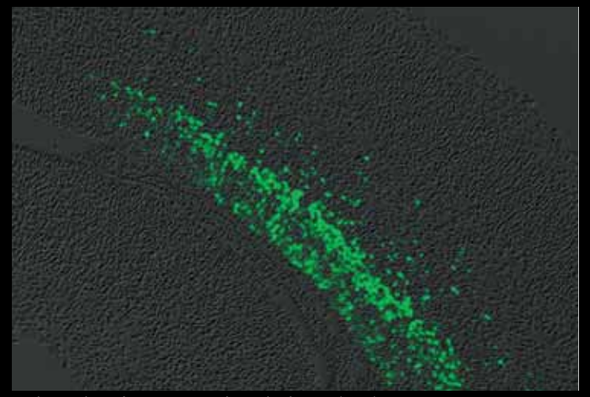
Eyepiece specifications

Item	Name	F.N.	Diopter	Micrometer (ømm)
Widefield	WHN10X	22		24
	WHN10X-H	22	-8 — +5	24
	CROSSWHN10X	22	-8 — +5	
Super widefield	SWH10x-H	26.5	-8 — +2	—
	MICROSWH10X	26.5	-8 — +2	
	CROSSSWH10X	26.5	-8 — +2	

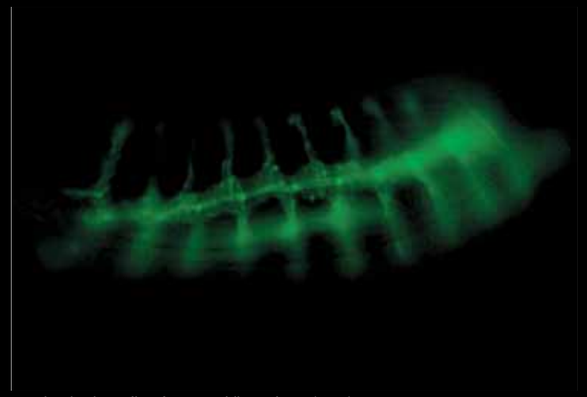
World-renowned Optical Performance Accommodates Various Observation Styles

Fluorescence

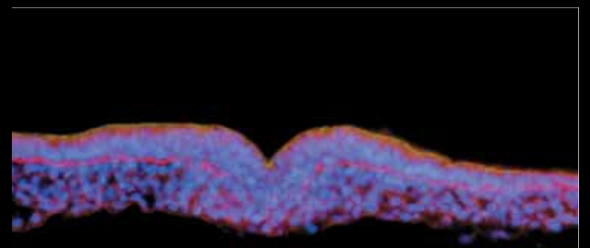
Olympus Takes Fluorescence Observation to Another Plane



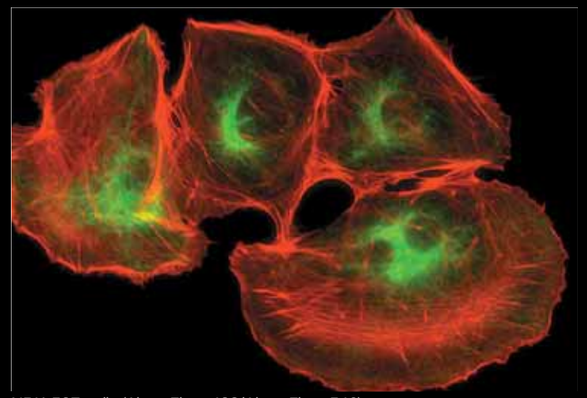
Brain section of mouse at embryonic day 15 (GFP)



Tracheal primordia of *Drosophila* embryo (GFP)



Gastrulation stage chicken embryo (DAPI/Alexa Fluor 488/Alexa Fluor 594)

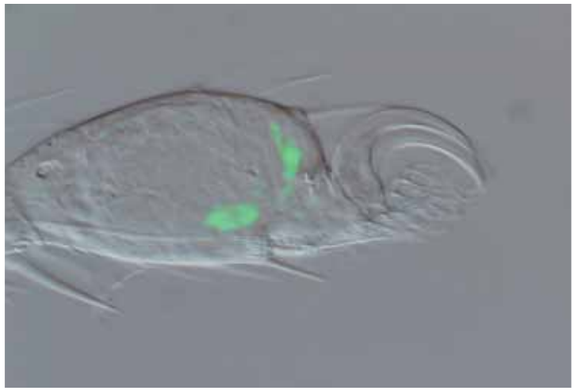


NRK-52E cells (Alexa Fluor 488/Alexa Fluor 546)

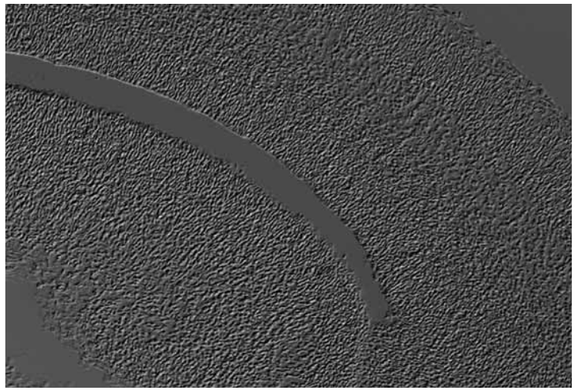
A total of three types of reflected illuminators are available, the motorized fluorescence illuminator BX3-RFAA, the coded fluorescence illuminator BX3-RFAS, and the universal reflected illuminator BX3-URA.
Eight fluorescence mirror units can be attached for comfortable multi-color fluorescence observations. Fly's-eye lenses, that are equipped with both BX3-RFAA and BX3-RFAS, and high-performance filters that come with mirror units realize bright, efficient fluorescence observations. Storing fluorescence mirror unit data (used in imaging) together with the images is possible by integrating coded fluorescence illuminator and motorized fluorescence Illuminator.

Nomarski DIC

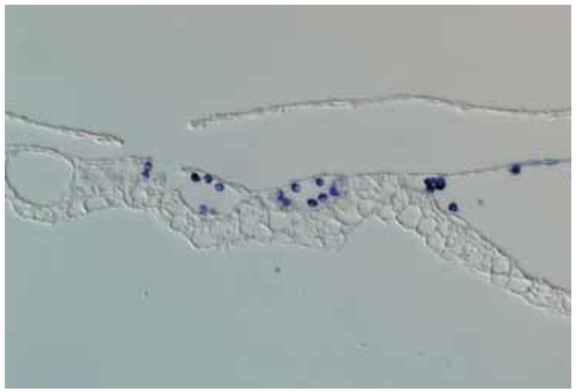
Image Optimization According to Specimen Characteristics



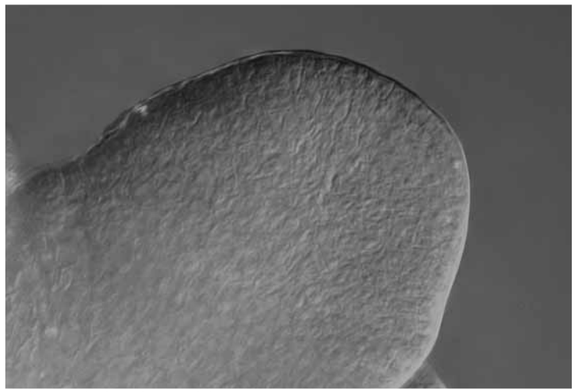
Distal Tip of a *Drosophila* limb (GFP)



Brain section of mouse at embryonic day 15



Blood island at stage 12 of chicken development



A shoot apical meristem of rice

Olympus has prepared a wider selection of DIC sliders with varied shearing value for acquiring optimal specimen images. The U-DICT and the U-DICTS are designed for all-round performance. The U-DICTHC optimizes high-contrast observations of thin specimens, and the U-DICTHR, high resolution with less glare for thick specimens.
Two types of condensers are also available: the 8-position universal condenser U-UCD8-2 and the motorized universal condenser BX3-UCD8A, both for various observations (brightfield, darkfield, phase contrast, DIC and simple polarized light).

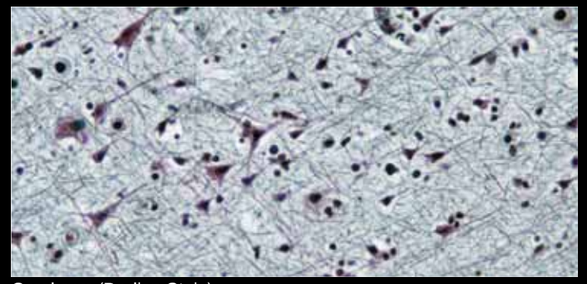
①U-DICT ②U-DICTS ③U-DICTHR
④U-DICTHC

Brightfield

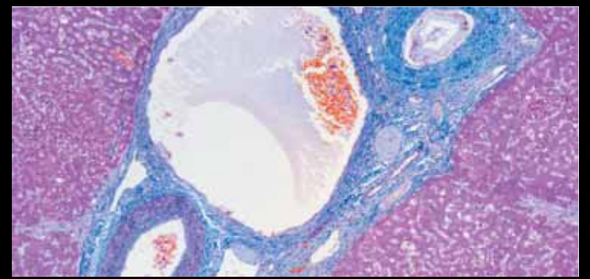
Brighter Images, with Superb Resolution/flatness at All Magnifications

A diverse condenser lineup includes the achromatic aplanatic U-AAC, delivering excellent resolution and flatness from low to high magnifications, the swing-out U-SC3 accommodating 1.25x to 100x, the low magnification U-LC for continuous 2x to 100x (Dry) observations, and the ultra low magnification U-ULC-2.

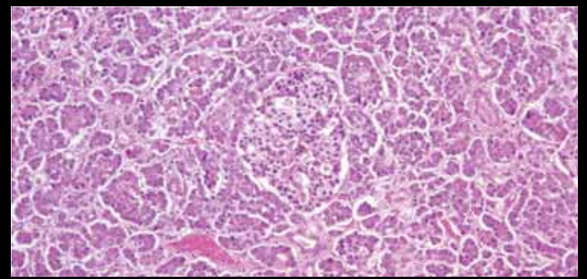
①U-SC3 ②U-ULC-2 ③U-AC2 ④U-AAC ⑤U-LC



Cerebrum (Bodian Stain)



Liver (Azan Stain)



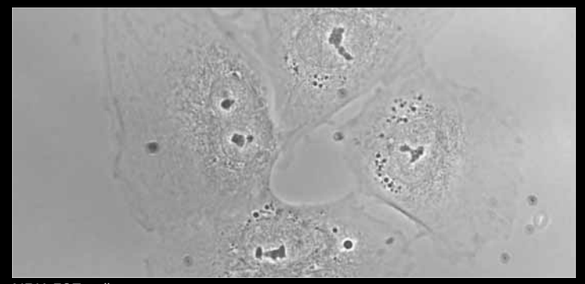
Pancreas (HE Stain)

Phase Contrast

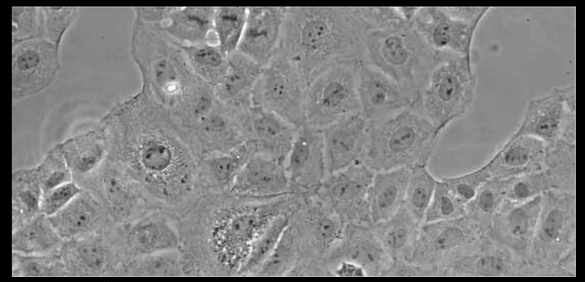
Ideal Phase Contrast Observation with Excellent Image Clarity

High contrast phase imaging allows close observation of the cell interior and of live bacteria. Using UPLFLN-PH or PLN-PH series objectives, phase contrast observation from 10x up to 100x is achievable. With the U-PCD2 phase/darkfield condenser, users can view specimens in brightfield or darkfield. Simultaneous observation with reflected light fluorescence microscopy is also possible.

U-PCD2



NRK-52E cells



NRK-52E cells

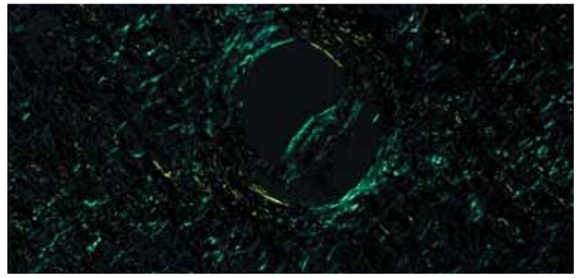
NRK-52E cells

Polarized Light

Polarizing Observation for Wide-area Retardation Measurement

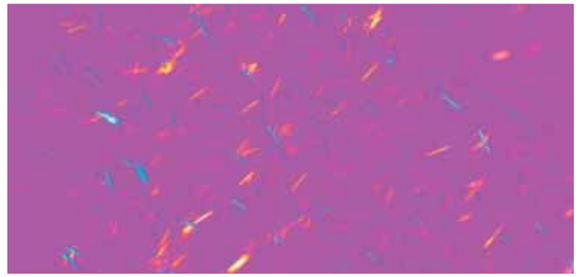
Tooth, bone, muscle tissue, nerve tissue, actomyosin fiber and mitotic spindle can all be observed, without staining. There are intermediate attachments (U-OPA/U-CPA) for orthoscopic and orthoscopic/conoscopic viewing. Various compensators make it possible to observe a wide range of retardation. Also available is a condenser exclusively for polarization observation, revolving nosepiece, rotating stage, objectives and simple polarizing attachment.

①U-POC-2 ②U-CPA ③U-OPA
④U-AN360P-2 ⑤U-P4RE



Amyloid

Asbestos



Urate Crystals

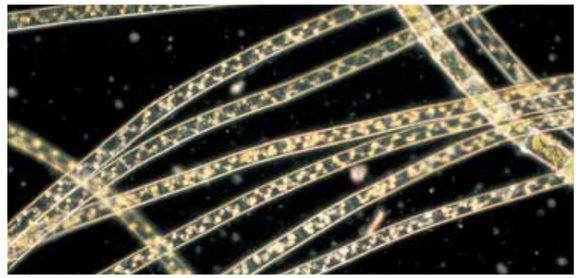
Darkfield

High-quality Darkfield Effect at All Magnifications

Two darkfield condensers are provided: the dry darkfield condenser (U-DCD), for magnifications from 10x to 100x (up to N.A. 0.80); and the oil immersion darkfield condenser (U-DCW), for magnifications from 20x to 100x (up to N.A. 1.2).

* Please consult your nearest Olympus representative for applicable objectives.

U-DCD U-DCW



Spirogyra

Water Flea

Microscope Digital Cameras to Fulfill Diverse Needs

DP72

High-speed, High-definition Image Capture Provides Smooth Fluorescence Imaging

Thanks to its high-speed hardware, the DP72 can capture high-resolution images equivalent to 12.8 million pixels* in around 2.5 seconds. The camera's high sensitivity and low noise (equivalent to the level of ISO 1600) ensure clear fluorescence imaging, while the resolution quality allows precise representation of particular specimen areas.

*By shifting the pixels of the 1.45 million pixel 2/3 inch CCD (one pixel = 6.45 um), it is possible to record still images equivalent to the maximum image recording size (4140 x 3096) or effective image size of 12.8 million pixels.

DP25

High-definition, High-resolution 5-million Pixel Technology

The DP25 provides live display at a high frame rate of 8 fps with exceptional quality of 2560 x 1920 pixels. In addition, the DP25 is equipped with a color profile that provides full-color images in real-time, allowing true color reproduction of specimens. It can easily be connected with just one cable (6-pin) to a PC with a FireWire (IEEE1394) port. It can also connect to a laptop PC via a FireWire (IEEE1394a) PC card.

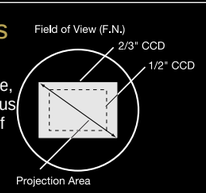
DP21

The Optimal Stand-alone Model for Conferences

The DP21 is a stand-alone digital camera with a convenient handset for simple operations from observations to imaging. Its accurate color reproductions and smooth, high-definition live image displays are ideal for small discussion groups and conferences. Optional cellSens imaging software platform also allows operation via computers.

Camera Adapters

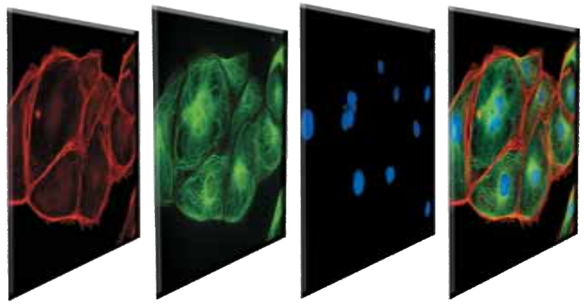
The single port tube of the trinocular tube is detachable, and can be used with various cameras through a range of adapters.

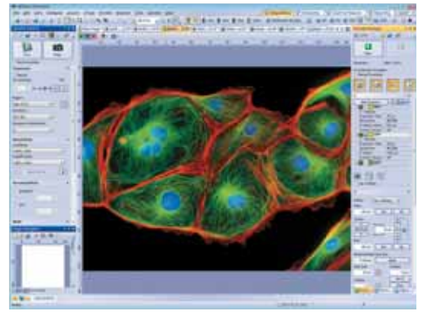


Camera Adapter (projection lens)	Projection Magnifications	Projection Area (F.N.)		
		2/3" CCD	1/2" CCD	1/3" CCD
U-TV1xC	1x	11	8	6
U-TV1x-2+U-CMAD3	1x	11	8	6
U-TV0.63xC	0.63x	17.5	12.7	9.5
U-TV0.5xC-3	0.5x	22	16	12
U-TV0.35xC	0.35x	22	16	12

Practical Field of View (mm) = $\frac{\text{Projection Area (field number)}}{\text{Objective Magnifications}}$

Imaging Software / cellSens





cellSens is an imaging software available in three versions to meet individual workflow needs. "Entry" is used for simple image acquisition. "Standard" provides simple operation for imaging documentation. "Dimension" allows for the control of the complete workflow from image capture to analysis. With GUI customization, working environments for both Standard and Dimension can be optimized according to workflow. cellSens frees the researcher to concentrate on his/her creative work.

*Available from version 1.4.

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 of 3D or timelapse data sets	✓		
Image acquisition	Snap/Movie acquisition	✓	✓	✓
	Multi-dimensional (xyzt and wavelength)	Multichannel 5D		
	Automated multiple image alignment (requires motorized stage)	Multiposition		
	Instantly create EFI image (manual or motorized Z)	✓		
Image processing	Geometry/combine/filter processing	✓	✓	
	Fluorescence unmixing	Multichannel 5D		
	3D deconvolution (constrained iterative deconvolution)	CI Deconvolution		
Image analysis	Region and line measurements	✓	✓	
	Object analysis and classification	Count & Measure		
	Colocalization	Multichannel 5D		
Documentation	Automatically compose Word reports	✓		
	Database image and data management solution for microscopy	Database		
Remote viewing	NetCam (live image data transmission over the internet)	✓		

- Lead-and-arsenic-free Eco-glass for optics, such as lenses and prisms
- Exclusion of hexavalent chrome from metal materials and surface metal treatments
- Exclusion of lead from electric components and solders
- Exclusion of chlorofluorocarbons in production
- Compliance with laws and regulations : RoHS (EU), Chinese RoHS (China), WEEE (EU)

Transport
- Adoption of cardboard packaging

Development/ Production

Enhanced Performance Even for the Environment

Olympus Group will develop products, services and production technologies with a careful and conscientious regard for safety and environmental protection, so that the society and environment we pass on will be sound and full of health. BX43/BX46/BX53/BX63 are Olympus-certified Eco-Products, manufactured under Olympus' own green designing standards, established in reference to Type II environmental label indication stipulations in the international standard ISO 14021.

Use
- LED Illumination White LED as light source, BX43 and BX46 reduce power consumption by 10%
- ECO (energy-saving) modes The BX53 sensor turns off the transmitted light lamp after around 30 minutes. The BX63 turns off the transmitted light lamp at the designated time on the touch panel controller setting

Waste Disposal
- Waste sorting

Improved recycling rate

BX63 system diagram

CAMERAS

TR-Adapter

- U-FMT — F mount adapter
- U-TMAD — T mount adapter
- U-SMAD — Sony mount adapter
- U-BMAD — Bayonet mount adapter
- U-CMAD3 — C mount adapter

* WHN10X, WHN10X-H, CROSS WHN10X — Eyepieces
U-CT30-2 — Centering telescope

- U-TVZ — Zoom camera port
- U-TV1x-2 — Direct image camera port
- U-DPCAD — Dual port tube with C mounts
- U-CMDPTS — C mount adapter for U-DPTS
- U-DPTS — Multi double port tube
- U-CMDPTS — C mount adapter for U-DPTS
- U-TV0.25xC — C mount camera port with 0.25x lens
- U-TV0.35xC-2 — C mount camera port with 0.35x lens
- U-TV0.5xC-3 — C mount camera port with 0.5x lens
- U-TV0.63xC — C mount camera port with 0.63x lens
- U-TV1XC — C mount camera adapter

- U-ETR-4*1 — Erect image trinocular tube
- U-TR30NIR — Trinocular tube
- U-TR30-2 — Trinocular tube
- U-TTR-2 — Tilting trinocular tube
- U-BI30-2 — Binocular tube
- U-TBI-3*1 — Tilting binocular tube
- U-TBI-3-CLI*1 — Tilting binocular tube
- U-TTBI — Ergonomic binocular tube
- U-ETBI — Ergonomic erect image binocular tube
- U-TTLBI*2 — Tilting, telescopic, lifting binocular tube

- U-KPA — Intermediate attachment for simple polarizing observation
- U-ANT — Analyzer for transmitted light
- U-CA — Magnification changer
- U-EPA2 — Eyepoint adjuster
- U-EPAL-2 — Eyepoint adjuster

- U-LH75XEAPO — 75 W xenon apo lamp housing
- U-RX-T — Power supply unit for xenon lamp
- U-LH100HGAPO — 100 W mercury apo lamp housing
- U-LH100HG — 100 W mercury lamp housing
- U-RFL-T — Power supply unit for mercury lamp

- U-GAN — Gout analyzer
- U-ANT — Analyzer for transmitted light
- U-DICT — DIC slider for transmitted light
- U-DICTS — Shift DIC slider for transmitted light
- U-DICTHR — High resolution DIC slider for transmitted light
- U-DICTHC — High contrast DIC slider for transmitted light

- U-D7REA — Motorized 7-position nosepiece
- U-IFCBL50 — Interface cable, 50 cm
- U-D7RES — Coded 7-position nosepiece
- OBJECTIVES

BX3-RFAS — Coded fluorescence illuminator

- Mirror units
- U-AN-2 — Analyzer slider
- BX3-RFAA — Motorized fluorescence illuminator
- U-IFCBL15 — Interface cable, 15 cm

- U-LHEAD — Extension adapter for lamp housing
- U-DULHA — Double lamp housing adapter
- U-AW — Motorized attenuator wheel
- U-IFCBL15 — Interface cable, 15 cm
- U-IFCBL200 — Interface cable, 200 cm

BX3-ARM — Standard arm

- U-AW — Motorized attenuator wheel
- U-IFCBL15 — Interface cable, 15 cm
- U-IFCBL200 — Interface cable, 200 cm
- U-LH100ADP — LH100 adapter
- U-LHLEDC — LED lamp housing
- U-LH100-3 — 100 W halogen lamp housing
- U-RMT — Extension cord

- U-IFCBL200 — Interface cable, 200 cm
- U-MCZ — Controller
- BX63F — BX63 frame
- U-POT — Polarizer
- Filter (ø45)
- U-FC — Filter cassette
- Touch panel controller (attached to BX63F)

- BX3-CBH — Control box
- C1394A — Interface cable
- PC (software)

- U-CST — Centering target
- U-HLD-4, U-HLDT-4 — Specimen holder
- U-HRD-4, U-HRDT-4 — Specimen holder
- U-HLS-4, U-HLST-4 — Specimen holder

- U-SHG, U-SHGT — Rubber grips
- U-SVLO — Oil rectangular stage with left-hand control
- U-SVRO — Oil rectangular stage with right-hand control
- U-SVLB-4 — Mechanical stage with left-hand control
- U-SVRB-4 — Mechanical stage with right-hand control

BX3-STAD — Stage adapter

- XY-controller (attached to BX3-SSU)
- Control box (attached to BX3-SSU)
- BX3-SSU — Scanning stage with ultrasonic

- IX2-GCP — Glass stage insert plate
- IX-CP50 — Insert plate
- IX-SCL — Slide clip
- IX-SVL2*3 — Cross stage with short left handle

- U-SC3 — Swing-out condenser
- U-AAC — Achromatic/ Aplanatic condenser
- U-ULC-2 — Ultra low condenser
- U-DCD — Darkfield condenser, dry
- U-DCW — Darkfield condenser, oil

- U-TLO — Oil top lens
- U-TLD — Dry top lens
- BX3-UCD8A — Motorized universal condenser
- U-IFCBL15 — Interface cable, 15 cm

Optical elements

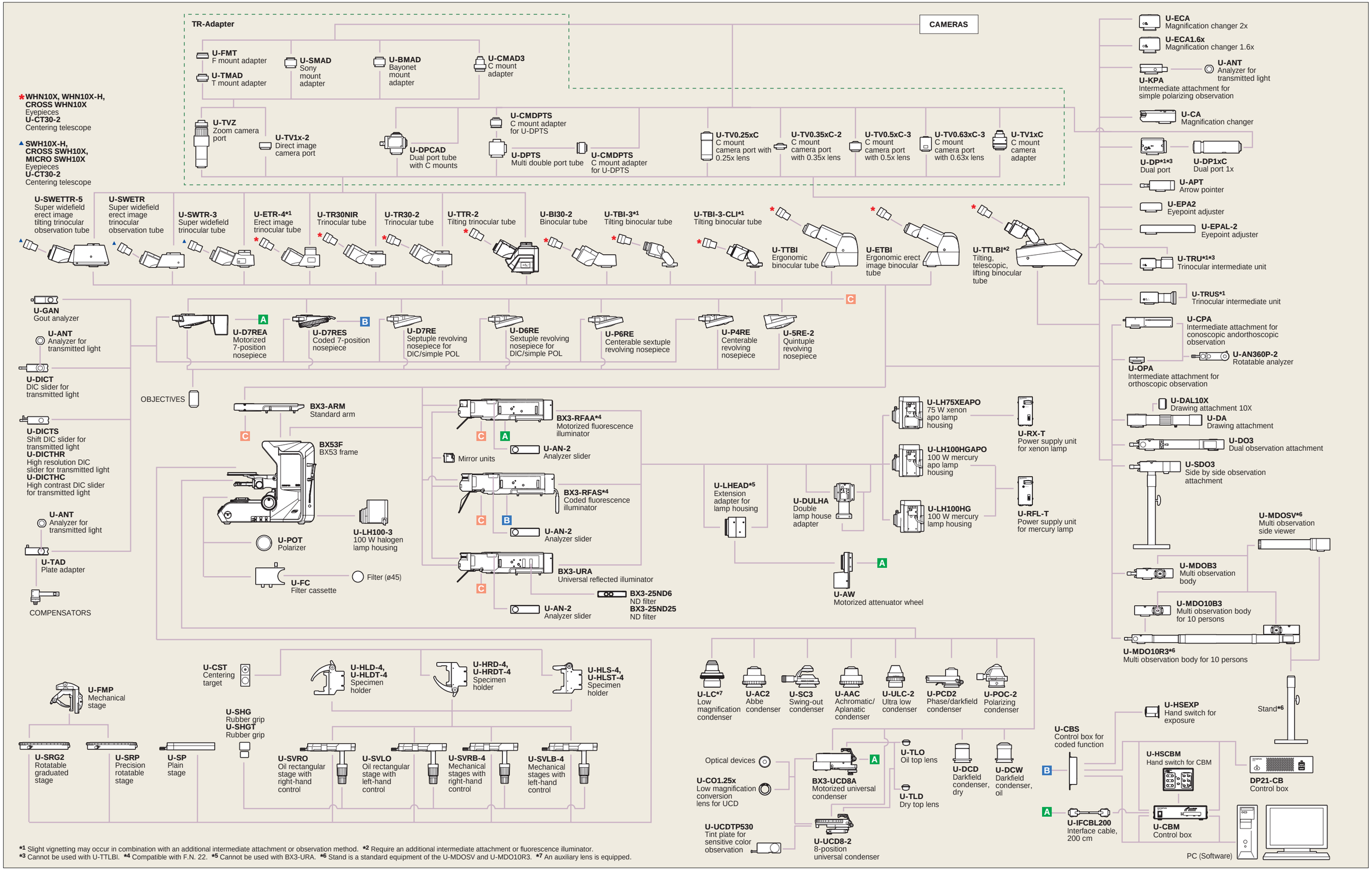
- U-CO1.25x — Low magnification conversion lens for UCD
- U-UCDTP530 — Tint plate for sensitive color observation
- U-UCD8-2 — 8-position universal condenser

- U-TLO — Oil top lens
- U-TLD — Dry top lens

*1 Slight vignetting may occur in combination with an additional intermediate attachment or fluorescence illuminator. *2 Require an additional intermediate attachment or fluorescence illuminator.

*3 Cannot be used with BX3-UCD8A.

BX53 system diagram



*1 Slight vignetting may occur in combination with an additional intermediate attachment or observation method. *2 Require an additional intermediate attachment or fluorescence illuminator.
*3 Cannot be used with U-TTLBI. *4 Compatible with F.N. 22. *5 Cannot be used with BX3-URA. *6 Stand is a standard equipment of the U-MDOSV and U-MDO10R3. *7 An auxiliary lens is equipped.

BX63 specifications

Microscope frame	Optical system	UIS2 optical system
	Focus	Built-in motorized nosepiece focus Stroke: 20 mm, minimum increment: 0.01 µm, maximum nosepiece movement speed: 3 mm/s
	Illuminator	Built-in Koehler illumination for transmitted light, Light intensity LED indicator, Built-in motorized field stop • High color reproductivity LED light source •12 V 100 W halogen bulb (pre-centered)
Revolving nosepiece		• Motorized septuple revolving nosepiece • Interchangeable reversed coded septuple nosepiece
Observation tube	Widefield (F.N. 22)	• Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield tilting,Telescopic,Lifting binocular tube • Widefield ergo binocular • Widefield binocular
Stage		• Ultrasonic stage (Stage stroke: X:76 mm x Y: 52 mm, maximum stage movement speed: 30 mm/s • Ceramic-coated coaxial stage with left or right hand low drive control: with rotating mechanism and torque adjustment mechanism, optional rubber grips available • Cross stage with short left handle
Condenser		• Motorized universal condenser (N.A. 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: (N.A. 1.4)] • Swing out Achromatic (N.A. 0.9), for 1.25x–100x (swing-out: 1.25x–4x) • Achromatic Aplanatic (N.A. 1.4), for 10x–100x • Universal (N.A. 0.9), for 1.25x–100x [swing-out: 1.25x–4x, with oil top lens:(N.A. 1.4)] • Ultra low (N.A. 0.16), for 1.25x–4x • Darkfield dry (N.A. 0.8–0.92), for 10x–100x • Darkfield oil (N.A. 1.20–1.40), for 10x–100x
ND filter wheel		• Motorized 6-position ND filter wheel
Fluorescence illuminator		• Motorized multi-purpose coded type (F.N. 22, motorized 8-position mirror unit turret, 4-position ND slider) • Multi-purpose coded type (F.N. 22, 8-position mirror unit turret, 4-position ND slider)
Fluorescence light source		• 100 W Hg apo lamp housing and transformer • 100 W Hg lamp housing and transformer • 75 W Xe lamp housing and transformer
Controller		• High-performance control box (I/F: FireWire)

*This device is designed for use in industrial environments for the EMC performance (EC61326-1 Class A device). Using it in a residential environment may affect other equipment in the environment.

BX53 specifications

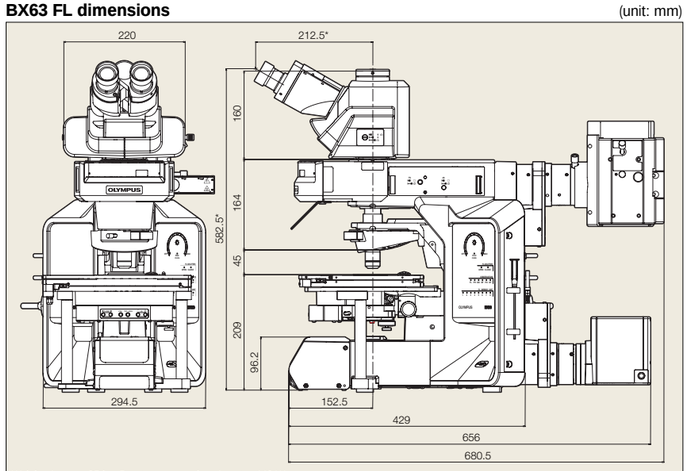
Microscope frame	Optical system	UIS2 optical system
	Focus	Vertical stage movement: 25 mm stage stroke with coarse adjustment limit stopper, Torque adjustment for coarse adjustment knobs, Stage mounting position variable, High sensitivity fine focusing knob (minimum adjustment gradations: 1 µm)
	Illuminator	Built-in Koehler illumination for transmitted light, Light preset switch, Light intensity LED indicator, Built-in filters (LBD-IF, ND6, ND25, optional), 12 V 100 W halogen bulb (pre-centered)
Revolving nosepiece		Interchangeable reversed quintuple/coded quintuple/sextuple/septuple/coded septuple nosepiece
Observation tube	Widefield (F.N. 22)	• Widefield tilting, telescopic and lifting binocular • Widefield tilting trinocular • Widefield trinocular • Widefield erect image trinocular • Widefield tilting binocular • Widefield tilting,Telescopic,Lifting binocular tube •Widefield ergo binocular •Widefield binocular
	Super widefield (F.N. 26.5)	• Super widefield trinocular • Super widefield erect image trinocular
Stage		Ceramic-coated coaxial stage with left or right hand low 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 (N.A. 1.1), for 4x–100x • Swing out Achromatic (N.A. 0.9), for 1.25x–100x (swing-out: 1.25x–4x) • Achromatic Aplanatic (N.A. 1.4), for 10x–100x • Phase contrast, darkfield (N.A. 1.1), [phase contrast: for 10x–100x, darkfield: for 10x–100x (up to N.A. 0.80)] • Universal (N.A. 0.9), for 1.25x–100x [swing-out: 1.25x–4x, with oil top lens:(N.A. 1.4)] • Low (N.A. 0.75), for 2x–100x(Dry) • Ultra low (N.A. 0.16), for 1.25x–4x • Darkfield dry (N.A. 0.8–0.92), for 10x–100x • Darkfield oil (N.A. 1.20–1.40), for 10x–100x
Fluorescence illuminator		• Multi-purpose coded type (F.N. 22, 8-position mirror unit turret, 4-position ND slider) • Economical type (F.N. 26.5, 8-position mirror unit turret)
Fluorescence light source		• 100 W Hg apo lamp housing and transformer • 100 W Hg lamp housing and transformer • 75 W Xe lamp housing and transformer

*The U-CBM is designed for the BX3 use in industrial environments for the EMC performance (IEC61326-1 Class A device). Using it in a residential environment may affect other equipment in the environment.

BX63/BX53 common specifications

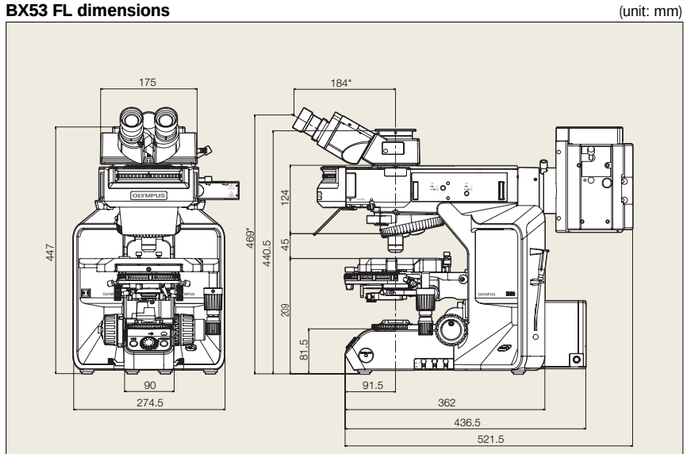
Operating environment	• Indoor use • Ambient temperature : 5 º to 40 ºC (41 º to 104 ºF) • Maximum relative humidity : 80 % for temperatures up to 31º C (88 ºF), decreasing linearly through 70 % at 34 ºC (93 ºF), 60 % at 37 ºC (99 ºF), to 50 % relative humidity at 40 ºC (104 ºF) • Supply voltage fluctuations : Not to exceed ±10 % of the normal voltage

BX63 FL dimensions (unit: mm)



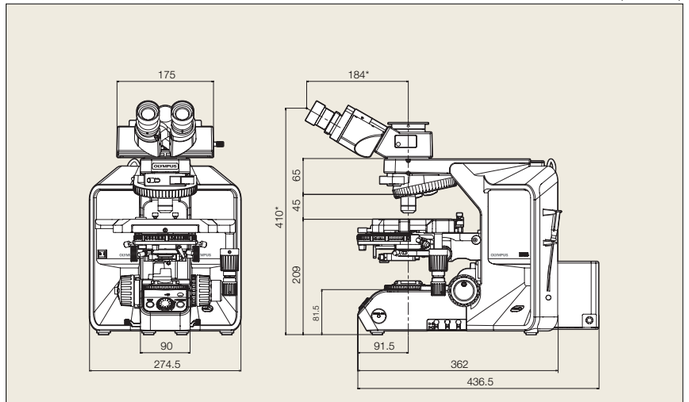
Weight: Approx. 35 kg, Power consumption: Approx. 440 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53 FL dimensions (unit: mm)



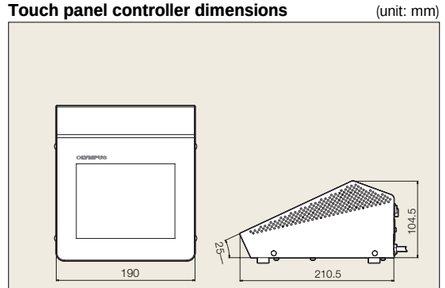
Weight: Approx 21 kg, Power consumption: Approx. 290 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

BX53 BF dimensions (unit: mm)



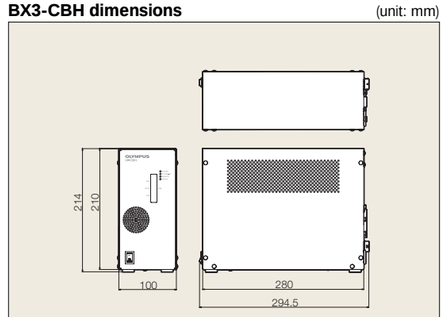
Weight: Approx. 16 kg, Power consumption: Approx. 140 W
The length marked with an asterisk (*) may vary according to interpupillary distance. Distance for figure shown is 62 mm.

Touch panel controller dimensions (unit: mm)



Weight: Approx. 2.4 kg, Power consumption: Approx. 25 W

BX3-CBH dimensions (unit: mm)



Weight: Approx. 4.2 kg, Power consumption: Approx. 230 W