

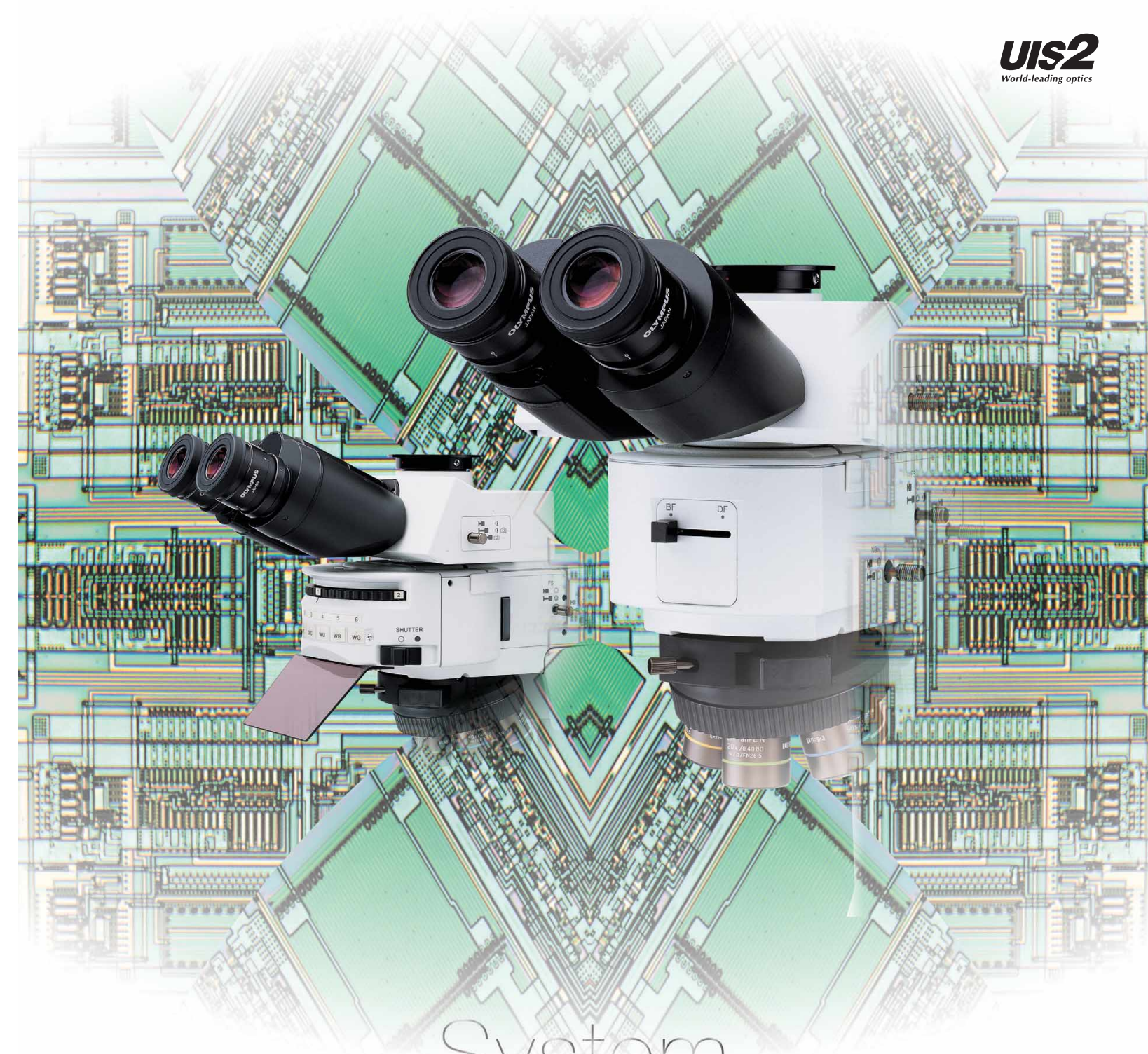
OLYMPUS®

Your Vision, Our Future

Metallurgical Microscopes

BX2M/MX51

UIS2
World-leading optics



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- OLYMPUS CORPORATION is FM553994/ISO9001 certified.
- Illumination devices for microscope have suggested lifetimes. Periodic inspections are required. Please visit our web site for details.
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System
Revolution
Beyond
Systems

Power and flexibility to perform multiple inspections with outstanding efficiency.

- The BX2M*/MX51 microscope lineups offer the stages of a unique X/Y travel range in 50mm through 150mm.
- Outstanding UIS2 optical performance.
- Excellent image clarity and superb resolution for all inspection demands.
- Greater system flexibility with unprecedented freedom to select and combine components.
- Logical layout for superior operation.
- Newly employed arm integrated reflected light illuminator for diverse applications.

* BX2M series comprises BX51(M), BX41M-LED, BX51-IR, BXFM(S) and so forth.



MX51



BX51

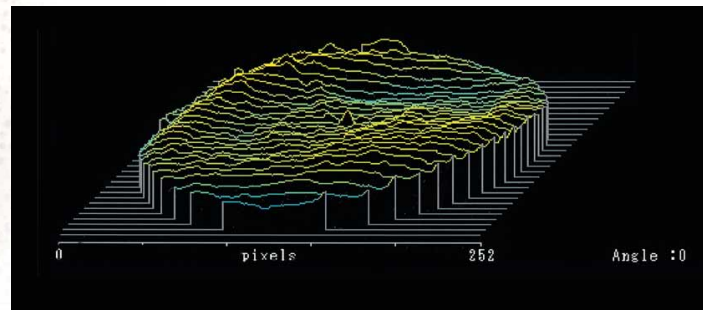
EXCELLENT OPTICS

New standard of the UIS2 optics, wavefront aberration control guarantees the world's highest level imaging, even further.



A new standard of the objective lens performance, using wavefront aberration control.

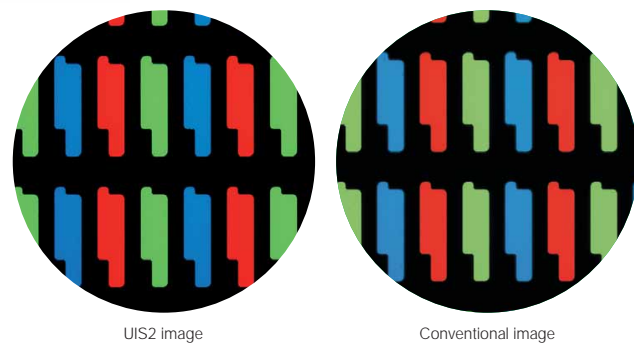
The Olympus UIS2 objective lenses set a new standard, with wavefront aberration control in addition to common performance standards of N.A. and W.D. Olympus challenges farther highest order optics which has not been fulfilled by the conventional standards. We offer excellent performance objective lenses by minimizing the aberrations that lower resolution.



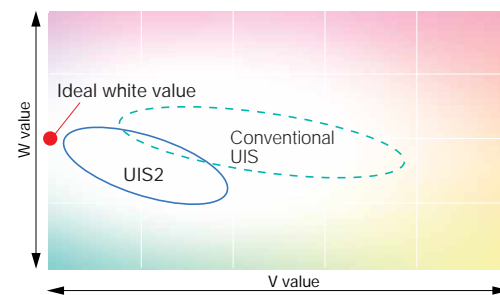
An example of 3D display of a wave front measured with a laser interferometer. The flatter the surface of the lens, the better the aberration correction becomes.

Natural color reproduction faithful to the specimen.

UIS2 objective lenses realize natural color reproduction without any coloration by using stringently selected high transmittance glass and advanced coating technology that realizes high transmittance which is flat over an ultra-wide band wavelength. In addition, since the total optical system, including the tube lens is designed to reproduce a natural color, clear images faithful to the specimen are obtained even with digital imaging.



Color temperature comparison

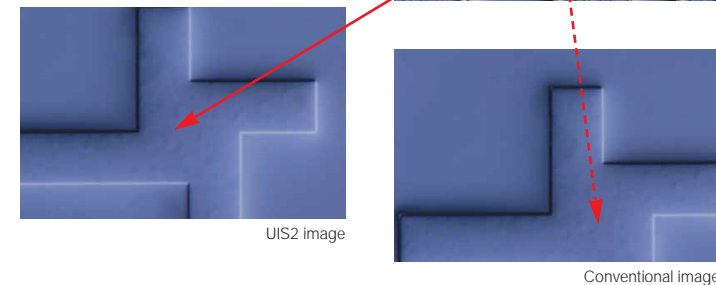


A comparison of the color temperature of UIS2 objective lenses and conventional UIS objective lenses. The color temperature of the UIS2 objective lenses is within a range which is very close to the color temperature target, which represents ideal white value.

UIS2 objective lenses with excellent image parcentricity.

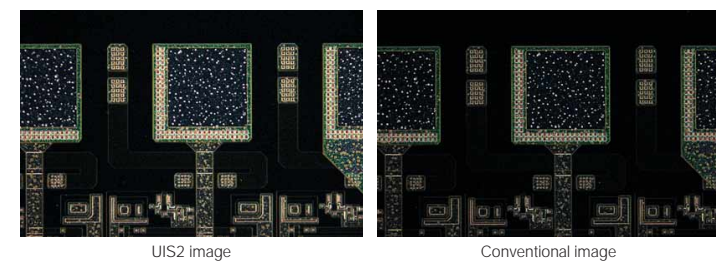
In high power Semi-apochromatic UIS2 objective lenses, centration tolerance between objective lenses on the microscope nosepiece improved by a factor of 2 so that the image never fail to keep the image within the center of the field of view even with digital camera. Centration of the image between objective lenses allows for fast and fatigue free operation.

* 50x or higher power in both MPLFLN and LMPLFLN series



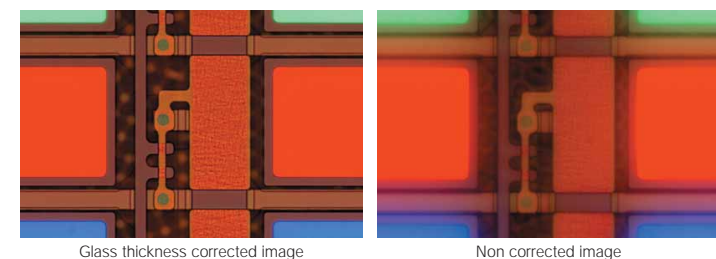
The brightest Darkfield image than ever.

New Semi-apochromatic objective lens series improves Darkfield brightness and significantly enhances sensitivity and allows quick detection of defects in the small diameter wafers used in today's smaller sensors and other high performance electronic devices.



Glass thickness corrected objective lenses handle various glass thicknesses.

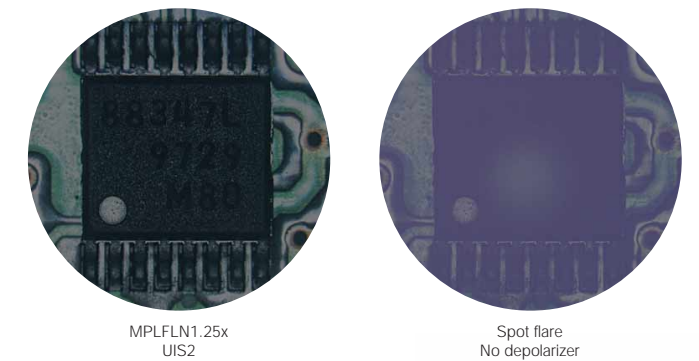
LCPLFLN-LCD objective lenses, accurately correct the spherical aberration which could become issue when viewing through glass substrates, are provided. The 20x and 50x objective lenses are useful when looking through glass thicknesses of 0 to 1.2 mm and the 100x objective lens is corrected for glass thicknesses up to 0.7 mm seamlessly.



Removes spot flare during ultra low magnification observation.

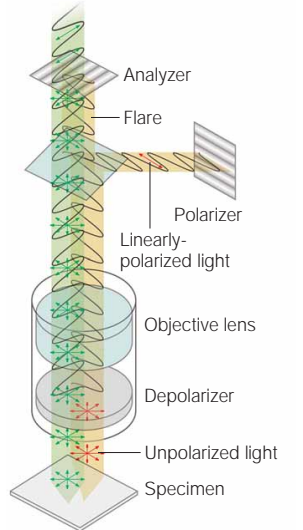
When a low reflection specimen is observed in ultra low power magnification, spot flare hinder precise observation. In UIS2 ultra low magnification observation, a depolarizer built into the objective lens end removes spot flare and, a clear, high contrast image is obtained by combining a set of polarizer and analyzer plate.

*1.25x and 2.5x objective lenses available



Spot flare removal principle conceptual diagram.

Since the light reflected from the surface of the objective lenses is the linearly-polarized light "as is", it is eliminated by analyzer at Crossed Nicol position and has no affect on the image. On the other hand, the light passed through the depolarizer at the end of the objective lens becomes unpolarized light, and when the unpolarized light reflected from the specimen passes through the analyzer, only the linearly-polarized light that matches the vibration direction of the analyzer passes through and forms an image.



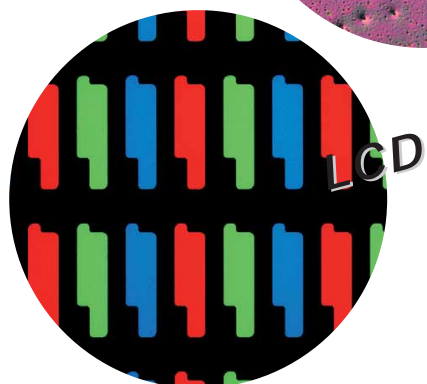
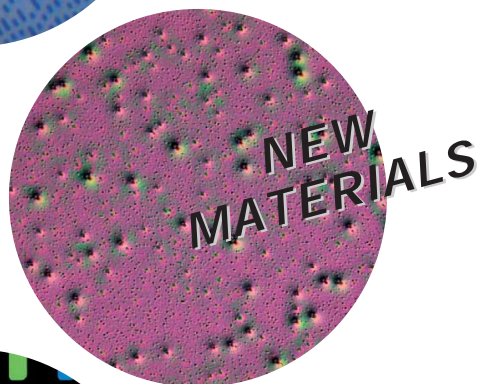
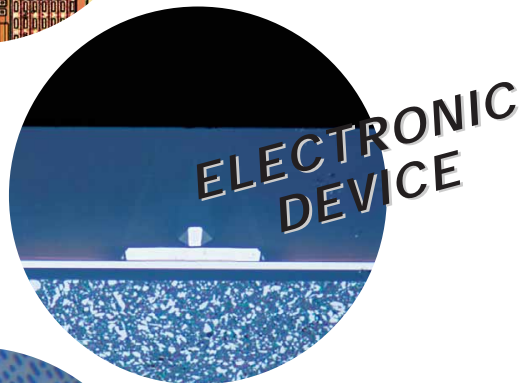
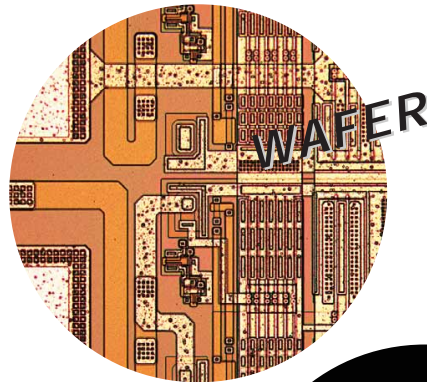
Promotes environmentally-friendly ecologization and weight reduction.

Olympus was the first to consider the environment and to tackle manufacturing ecology. As part of this, the UIS2 optical system uses eco-friendly glass free of lead and arsenic. In addition, the major Semi-apochromatic UIS2 objective lenses are lightened by approximately 2/3. This contributes to prevention of environmental pollution, improvement of operability of objective lenses replacement, etc.

*Some UIS2 objective lenses are the same weight as conventional objective lenses

SYSTEM VERSATILITY

Wide choice of handy accessories to meet the full range of microscopy inspection needs.



Stage selection and adapter plates.

BX Various special stages and adapter plates are provided: a 100 x 100 mm stage plate (U-MSSP4), a wafer holder plate (U-WHP2) for 3- and 4-inch wafers and extra-large stages (U-SIC4R2 and U-SIC4L2), allowing the use of a glass plate (U-MSSPG) for transmitted light observations.



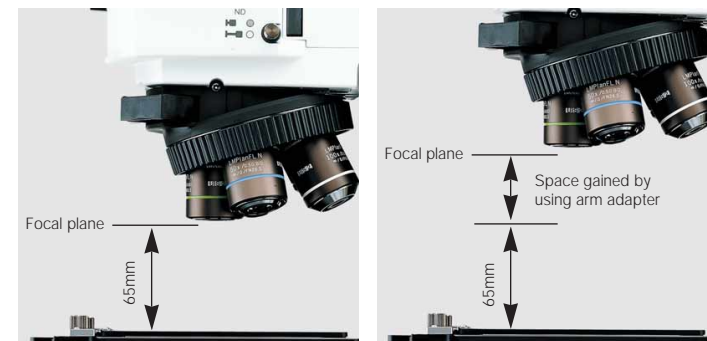
MX The MX51 accommodates a 6 inch wafer holder and a glass plate in combination with 150 mm stage, MX-SIC6R2 and also offers more versatile holders and plates with 100 mm stage, U-SIC4R2.



- ① U-SIC4R2
- ② BH3-SPG6
- ③ BH3-SP6
- ④ BH3-WHP6
- ⑤ U-MSSP4
- ⑥ U-WHP2
- ⑦ BH2-WHR43
- ⑧ BH2-WHR54
- ⑨ BH2-WHR65

Observation of thick specimens.

BX BX41M-LED/BX51M Upright Incident Microscope System accommodates up to 65mm high specimen as a standard. Besides, the reflected light illuminator, integrated into the microscope arm gives them an extra height degree of flexibility, by inserting an arm adapter between the microscope and the illuminator.



MX The standard maximum specimen thickness is 30mm. Insert the intermediate attachment to accommodate thicker specimens.



Improved efficiency with the motorized revolving nosepiece.

Various revolving nosepieces including motorized ones which can be directly operated by blind-touch control pad are offered. The motorized nosepieces improve observation efficiency and eliminate particle shedding (type C). The motorized revolving nosepiece can be attached to all reflected light illuminators and microscope frames.



Diverse manual-type revolving nosepiece including perfect parcentricity type .

The quintuple BD revolving nosepiece U-P5BDRE and sextuple revolving nosepiece with centering mechanism U-P6RE enables perfect parcentricity between three objective lenses. There is no image center displacement, even when switching from low to high magnifications, an added convenience.



Fiber illumination system for all reflected light illuminators.

Cold light illumination, using fiber light guides, is available for all reflected light illuminators. Fiber light illumination systems such as the LG-PS2 utilize a bright 12V100W halogen lamp.

* The type of model varies by country in use.



Reflected light illuminators are compatible with a variety of light sources.

For flexibility in high intensity and long lifetime illumination, Olympus lamphouses offer Halogen, Xenon and Mercury bulb options. The apochromatic collector lens system for halogen, xenon and mercury light sources compensates for chromatic aberrations from the visible to near-infrared light.



Transmitted light observation.

BX Various transmitted light condensers compatible with true transmitted light observation are available. Choose the condenser matched to the purpose.



MX The combination of a transmitted illumination unit with the 150mm stage, MX-SIC6R2 enables transmitted light brightfield observation of specimens up to 2mm thick, with an illumination range of 100 x 100mm. The slim-profiled illumination unit is designed for minimal effect on the stage operation and is useful for observations of specimens such as MEMS (Micro Electronics Mechanical Systems) sensors and other optical/optronic components.



Filter sliders for flexible illumination.

A variety of filter sliders are provided for such filters as UV-cut, color temperature change and color enhancement.

ERGONOMIC DESIGN

Improved design signals new advance in ergonomics.



Easy focusing and convenient "either-side" attachment of the fine focusing knob.

BX The fine focusing knob can be removed and attached to either side of the microscope to suit right/left-handed operators. The control knob's tactile cover allows light-touch fingertip operation, while the fine focus mechanism is extremely accurate, even at high magnifications.

Agile stage movement and coarse/fine movement interchange.

MX Two stage sizes are selectable, 150mm (MX-SIC6R2) and 100 mm(U-SIC4R2). The 150mm stage has a built-in clutch lever, which enables quick location of specimens on the stage without diverting the operator's view, allowing quick, easy inspections.

Repositioned optical controls for smoother performance.

MX Controls for focusing and light intensity adjustment are placed closer together, so that both can be operated with one and the same hand.



Anti-static treatment prevents dust contaminating the specimen.

MX The frame and 6-inch stage are coated to prevent static build-up.

* Use special metal plate.

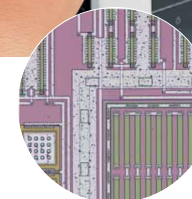
Range of tilting observation tubes to assist operator comfort.

U-TBI-3 tilting tube is provided for binocular observation, and the U-SWETTR-5, MX-SWETTR observation tubes for documentation. This range of choice lets each operator achieve the most suitable eyepoint and an ergonomic posture, resulting in greatly reduced fatigue for long-duration observations.

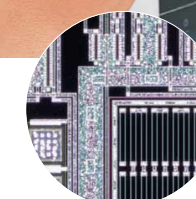


Integrated ND filter for more comfortable switching between brightfield/darkfield observation methods.

The brightfield/darkfield reflected light illuminator features an integrated ND filter that protects the operator's eye by preventing sudden, drastic changes in brightness. This integrated function can be disengaged manually.



Brightfield observation



Darkfield observation

Nomarski DIC system provides an optimum image suited to the specimen.

Olympus Nomarski DIC observation uses a simple observation switching slider type single prism system. Three different DIC prisms are provided: the U-DICR for all imaging applications, high resolution U-DICRH, and high contrast U-DICRHC, so that the best resolution and contrast matched to the state of the specimen are obtained. Since the exit pupil position of the objective lens is standardized by the series, the position of the DIC prism does not have to be switched when the magnification was changed by switching the objective lens, e.g. MPLFLN series 5x through 150x.



U-DICR



U-DICRHC

Polarizer/analyzer plates are interlocked for easy slide IN/OUT.

The interlocked polarizer/analyzer slide IN/OUT on the optical axis by one action so that the switching between Nomarski DIC/POL and other observation methods is performed speedy. In addition, the polarizer and analyzer are designed so that the reflected light illuminator slide-in and slide-out operations can be performed from either the left or right side.



Simultaneous attachment of digital camera and video camera.

The intermediate trinocular unit U-TRU, combined with the tilting observation tube U-TBI-3 makes simultaneous attachment of digital and video documentation equipment possible.



U-TRU

Convenient magnification changer.

The magnification changer applies an additional 2x magnification to the image, ideal for observation at highest magnifications without changing objective lenses, for maintaining working distance and for framing of the smallest specimen detail.



U-ECA

MICROSCOPE LINEUP

A full product line-up for every purpose — even for special applications.

- BF Brightfield observation
- DIC DIC observation
- PO Polarized light observation
- Transmitted light Transmitted light illumination
- Motorized Motorized control
- System combination System combination
- DF Darkfield observation
- FL Fluorescence observation
- IR Infrared light observation
- LED LED illumination
- ESD ESD treatment
- 150mm stage 150 x 150 stage

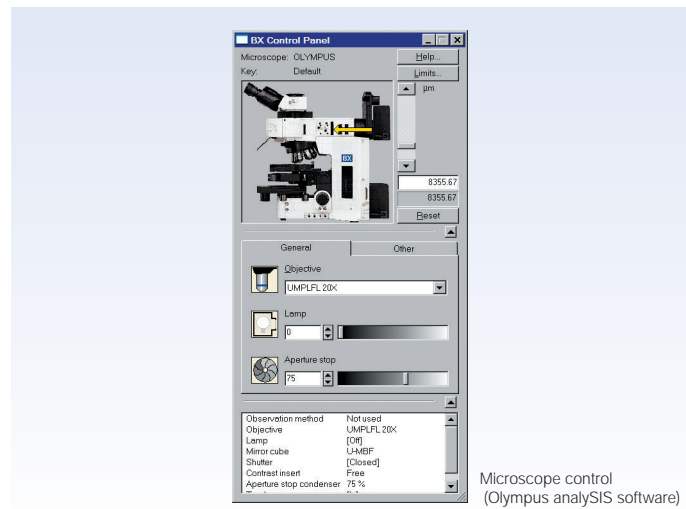
BX61

- BF
- DF
- DIC
- FL
- PO
- Transmitted light
- Motorized

Advanced features with motorized operation

The motorized BX61 microscope is provided with automatic focus and automatic switching between reflected and transmitted light. Image analysis software AnalySIS series enables a range of microscope operations to be performed via keypad or a personal computer.

- Complicated operation procedures can be macro-programmed to special function keys, either on the keypad or on the PC keyboard. This makes it possible to recall/reproduce specific observation conditions at the touch of a single button.
- Various motorized modules are provided, including high-speed revolving nosepieces and a powered mode-select illuminator.
- Multiple-spot laser-active-type auto focus unit U-AFA2M-VIS capable of up to 150x objective lens is mountable with high stability and broad Z range in focus capturing.



Microscope control (Olympus analySIS software)



BX61+BX-URFAA



BX61+BX-RLAA + U-AFA2M-VIS auto focus unit

BX51/BX51M

- BF
- DF
- DIC
- FL
- PO
- Transmitted light

Multiple observation modes in VIS (visible reflected/transmitted)

The BX51 microscope model offers reflected and transmitted light illumination, while the BX51M model offers reflected light illumination only. Both frames can accept the universal illuminator BX-URA2 which includes fluorescence capability, or the reflected light brightfield/darkfield illuminator BX-RLA2.

BX51 (reflected/transmitted light illumination model)

- Quick changeover between reflected light illumination and transmitted light illumination.

BX51M (reflected light illumination model)

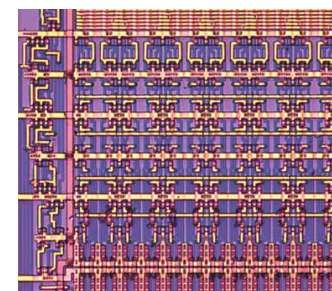
- Accommodates specimens up to 65mm in thickness as a standard. Specimens thicker than 65 mm can also be observed by inserting an arm adapter between the microscope and the illuminator.



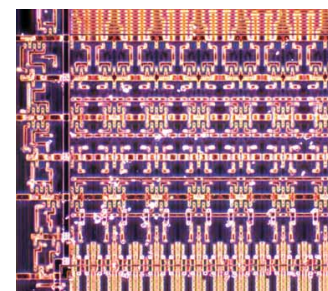
BX51+BX-URA2



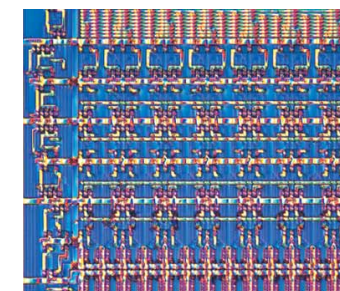
BX51M+BX-RLA2



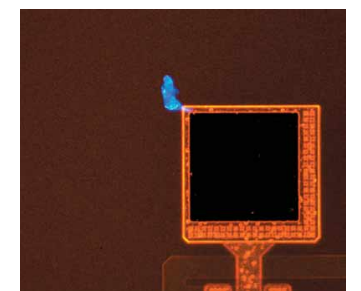
Brightfield observation



Darkfield observation



DIC observation



Fluorescent observation

BX41M-LED



ESD-capable model with built-in LED illumination

The BX41M-LED with built-in bright and super long-life LED illumination has ESD capability to protect the device from electrostatic discharge.

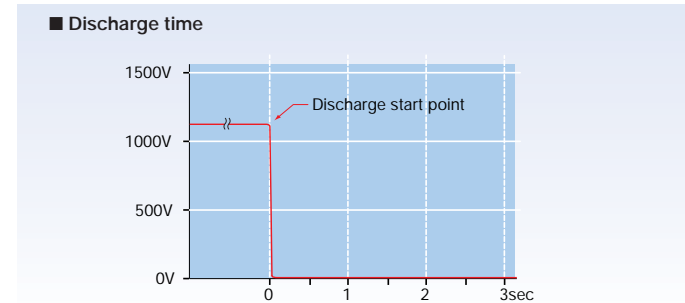
- LED illumination keeps natural color reproduction and a constant brightness during light adjustment or over lamp life span.
- LED illumination provides improvement in throughput and reduction in running costs as optical adjustment is unnecessary and work does not have to be interrupted due to lamp burn-out.
- LED illumination consumes less energy, 1/7 of that consumed by a 30W halogen lamp. Low power consumption also contributes to reduced CO₂.



LED illumination image

- ESD performance: surface resistance of 10⁸ ohm or less, discharge time of 0.2 sec or less*

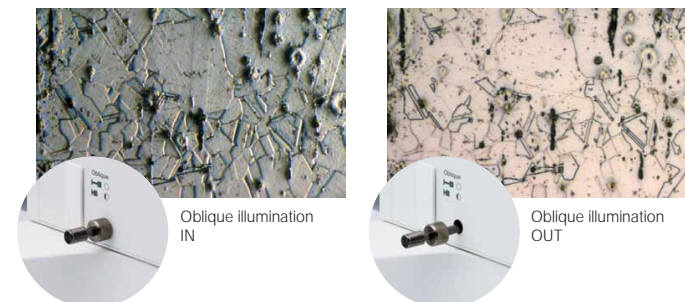
*When charged to 1000V and then discharged to 100V



- Equipped with 2 types of reflected light illuminators, BX-AKMA-LED (has an aperture stop and oblique illumination function) and BX-KMA-LED; oblique illumination with the BX-AKMA-LED provides high-contrast images in a simple process.



Electric heating ribbon (20x observation)



Olympus Eco-Products
We, Olympus, certify products conforming to our own environmentally-conscious standards as "Olympus Eco-products".

BXFM-S/BXFM



Perfect fit for the requirements of "installation into the system"

Two focusing units for combination with the latest Olympus microscope system. The BXFM-S unit incorporates a unique compact reflected light brightfield illuminator. The BXFM unit accommodates the reflected light brightfield/darkfield and fluorescence illuminators. Fiber illumination, with the option of external control, can be used with both models.

- The illuminator, integrated into the microscope arm helps to facilitate installation into the system or mounting onto the exclusive stand.
- An external light source (TH4-100/200) allows remote control of light intensity adjustment and turning ON/OFF of the 100W halogen illumination via an external signal.



- 1 Large stand (SZ-STL)
- 2 Stand (U-ST)
- 3 BXFM frame (BXFM-F)
- 4 Illuminator holder for BXFM (BXFM-ILH)
- 5 Assist spring for BXFM (BXFM-ILHSPU)
- 6 Reflected light illuminator for BF (U-KMAS)
- 7 Fiber adapter for reflected light observation (U-LGAD)
- 8 Single port tube with lens (U-TLU)
- 9 External light source (TH4-100/200)
- 10 Hand switch (TH4-HS)

BX-REMCB



Simple control box gives the multiple motorized functions to the BX51/BXFM

Control options include:

- the motorized revolving nosepiece.
- the motorized BF/DF Mode select and AS Open/Close via BX-RLAA.

Those controls are made via the hand switch (U-HSTR2) or directly from the computer via RS232C format.



- 1 BX-REMCB control box for motorized nosepiece and BF/DF illuminator
- 2 BX-RLAA Motorized BF/DF reflected light illuminator
- 3 U-D5BDREMC Motorized DIC quintuple BD revolving nosepiece

BX51-IR



Near infrared (IR) light imaging

The BX51-IR allows non-destructive inspection and analysis of regions not visible to the naked eye. It facilitates non-destructive observation of specimens such as internals of silicon wafers and on the back of packages and CSP bumps.

- Lineup of 5x to 100x IR objective lenses which compensate for aberrations from visible to near infrared light.
- Provides reflected and transmitted near infrared light observation model and reflected near infrared light observation model.

* Please contact your local Olympus dealer for IR camera system, large-size stage combination and system combination.



- 100W halogen lamp housing for IR (U-LH100IR)
- Trinocular tube for IR (U-TR30IR)
- Single port tube lens with lens for IR (U-TLUIR)
- Transmitted polarizer for IR (U-POTIR)
- Rotatable analyzer slider for IR (U-AN360IR)
- Reflected polarizer slider for IR (U-POIR)
- Band path filter (1100nm) for IR (U-BP1100IR)
- Band path filter (1200nm) for IR (U-BP1200IR)
- Objective lenses for IR (LMPLN5xIR, LMPLN10xIR, LCPLN20xIR, LCPLN50xIR and LCPLN100xIR)
- Connector to couple analyzer and polarizer (U-POIR accessory)

MX51



Offers the stage of 150 x 150mm travel area

The MX51 can be installed the MX-SIC6R2 150 x 150mm stage, which copes with larger and larger industrial field specimens. It also accepts the universal illuminator BX-URA2 which includes fluorescence capability, or the reflected light brightfield/darkfield illuminator BX-RLA2.

- Since coarse/fine movement can be switched using the stage grip of the built-in clutch of the MX-SIC6R2, the microscope delivers extremely comfortable operational environment.
- SEMI S2/S8 compliance enhances safety and ergonomics.
- Olympus' front operation design concept guarantees high operability and reliability.



UIS2 OBJECTIVE LENSES

Diverse lineup allows selection according to the purpose.

UIS2
World-leading optics



MPLAPON series

This is a Plan Apochromat objective lens series for brightfield observation with chromatic aberration corrected at high level. Olympus has assured that this series has the optical performance (wavefront aberration) with a Strehl ratio^{*1} of 95% or more^{**} first in the world as a universal objective lens. This series is also compatible with a differential interference contrast or simple polarized observation.



MPLAPON100x-Oil

This is a Plan Apochromat objective lens of the oil-immersion type^{**1} that features a numerical aperture of 1.4. It provides the highest level of chromatic aberration correction and a high resolving power.



MPLFLN (-BD) series

These Plan SemiApochromat objective lenses completely eliminate chromatic aberration at high level, which is perfect for a wide range of microscopic methods including brightfield darkfield, fluorescence, Nomarski DIC and simple polarized observation. All 50x or higher objective lenses have 1mm working distance to fulfill safe approach to the specimen. Since exit pupil positions from 5x through 150x are standardized, no switching of the DIC prism lever position is necessary when the objective lens power changes.



MPLFLN-BDP series

The Plan SemiApochromat POL design ensures through compensation for coma aberration. Distortion is also minimized, which makes these objective lenses the best choice for Nomarski DIC microscopy.



SLMPLN series

This Ultra long working distance Plan objective lens series minimizes a risk of collision between the specimen and the objective lens and it also delivers high contrast imaging.



LMPLFLN (-BD) series

Long working distance Plan SemiApochromat objective lenses provide more free space between the objective lens and the specimen so that it can prevent from collision between objective lens with the stepped specimen. Since exit pupil positions from 5x through 100x are standardized, no switching of the DIC prism lever position is necessary when the objective lens power changes. Use the BD series in brightfield and darkfield observation.



MPLN (-BD) series

Plan Achromat objective lenses with excellent flatness up to F.N. 22. Use the BD series in brightfield and darkfield observation.



LCPLFLN-LCD series

The perfect objective lenses for imaging specimen through glass plate like an LCD application. Aberration correction matched to the glass thickness is possible by using a correction collar.



LMPLN-IR, LCPLN-IR series

Objective lens series exclusive for the near-infrared microscopy largely of the internal structure in silicon wafers. LCPLN-IR series has correction collar for aberration dependent on thickness of silicon or glass substrate.

Objective lenses	Magnifications	N.A.	W.D. (mm)	Cover Glass Thickness ^{*1} (mm)	Silicon Thickness (mm)	Resolution ^{**4} (μm)
MPLAPON	50x	0.95	0.35	0	—	0.35
	100x	0.95	0.35	0	—	0.35
MPLAPON	100xOil	1.4	0.1	0	—	0.24
MPLFLN	1.25x ^{***4}	0.04	3.5	—	—	8.39
	2.5x ^{**4}	0.08	10.7	—	—	4.19
	5x	0.15	20.0	—	—	2.24
	10x	0.30	11.0	—	—	1.12
	20x	0.45	3.1	0	—	0.75
	40x ^{**4}	0.75	0.63	0	—	0.45
	50x	0.80	1.0	0	—	0.42
MPLFLN-BD ^{**4}	5x	0.15	12.0	—	—	2.24
	10x	0.30	6.5	—	—	1.12
	20x	0.45	3.0	0	—	0.75
	50x	0.80	1.0	0	—	0.42
	100x	0.90	1.0	0	—	0.37
MPLFLN-BDP ^{**4}	5x	0.15	12.0	—	—	2.24
	10x	0.25	6.5	—	—	1.34
	20x	0.40	3.0	0	—	0.84
	50x	0.75	1.0	0	—	0.45
	100x	0.90	1.0	0	—	0.37
SLMPLN	20x	0.25	25	—	—	1.34
	50x	0.35	18	0	—	0.96
	100x	0.6	7.6	0	—	0.56
LMPLFLN	5x	0.13	22.5	—	—	2.58
	10x	0.25	21.0	—	—	1.34
	20x	0.40	12.0	0	—	0.84
	50x	0.50	10.6	0	—	0.67
	100x	0.80	3.4	0	—	0.42
LMPLFLN-BD ^{**4}	5x	0.13	15.0	—	—	2.58
	10x	0.25	10.0	—	—	1.34
	20x	0.40	12.0	0	—	0.84
	50x	0.50	10.6	0	—	0.67
	100x	0.80	3.3	0	—	0.42
MPLN ^{**5}	5x	0.10	20.0	—	—	3.36
	10x	0.25	10.6	—	—	1.34
	20x	0.40	1.3	0	—	0.84
	50x	0.75	0.38	0	—	0.45
	100x	0.90	0.21	0	—	0.37
MPLN-BD ^{**5**4**4}	5x	0.10	12.0	—	—	3.36
	10x	0.25	6.5	—	—	1.34
	20x	0.40	1.3	0	—	0.84
	50x	0.75	0.38	0	—	0.45
	100x	0.90	0.21	0	—	0.37
LCPLFLN-LCD	20x	0.45	8.3—7.4	0—1.2	—	0.75
	50x	0.70	3.0—2.2	0—1.2	—	0.48
	100x	0.85	1.2—0.9	0—0.7	—	0.39
LMPLN-IR ^{**7}	5X	0.1	23	—	—	5.50 ^{**12}
	10X	0.3	18	—	—	1.83 ^{**12}
LCPLN-IR ^{**7}	20X	0.45	8.3	0—1.2	0—1.2	1.22 ^{**12}
	50X	0.65	4.5	0—1.2	0—1.2	0.85 ^{**12}
	100X	0.85	1.2	0—0.7	0—1.0	0.65 ^{**12}

^{**5} — : Applicable to the view of specimens with/without a cover glass

0 : Applicable to the view of specimens without a cover glass

^{**6} Resolutions calculated with aperture iris diaphragm wide open.

^{**7} Limited up to F.N. 22. No compliance with F.N. 26.5.

^{**8} Analyzer and polarizer are recommended to the usage with MPLFLN1.25x or 2.5x.

^{**9} BD objective lenses cannot be combined with BX41M-LED.

^{**10} BD: Brightfield/darkfield objective lenses

^{**11} Slight vignetting may occur in the periphery of the field when MPLN-BD series objective lenses are used with high-intensity light sources such as mercury and xenon for darkfield observation.

^{**12} With the use of 1100 nm laser.

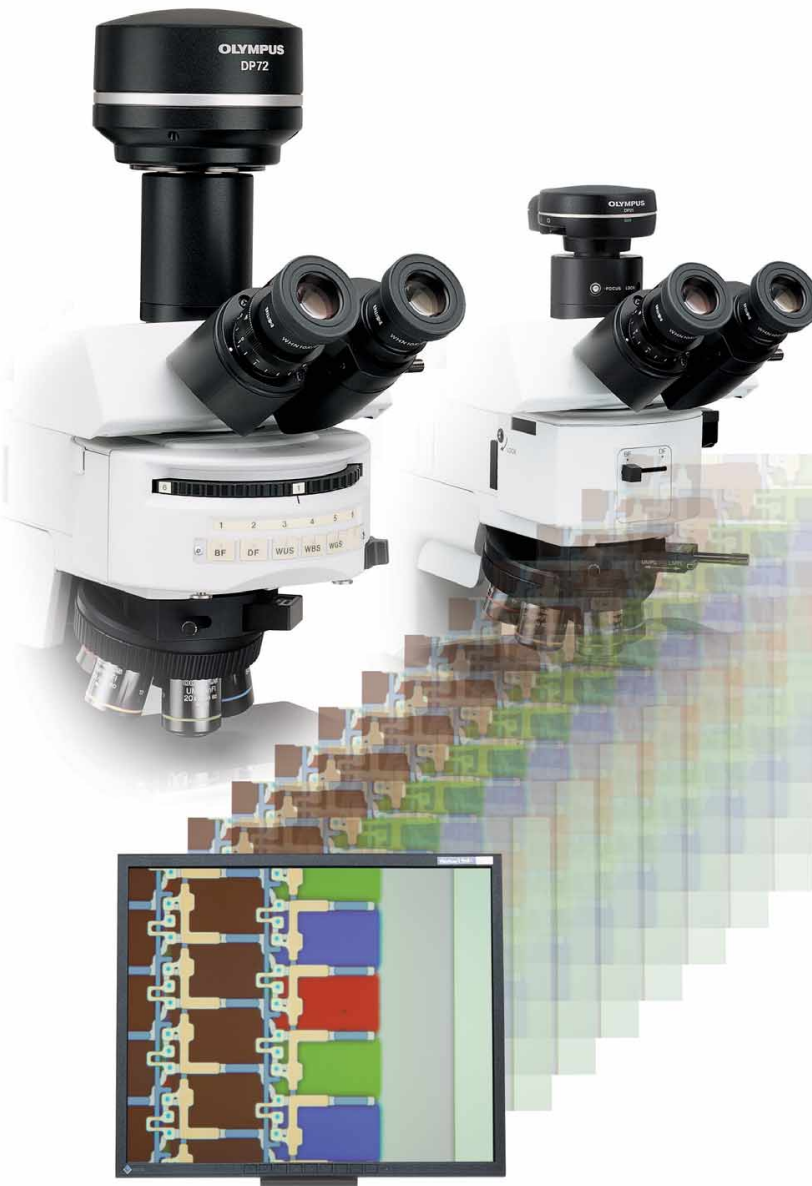
^{*1} Strehl ratio: When the light condensing ratio (central intensity) on the image field of an ideal aplanatic optical system is assumed as 100%, a light condensing ratio in % that an actual optical system can condense is known as Strehl ratio. The greater is this numeric value, the better becomes the quality of an optical system.

^{**2} Strehl Ratio is guaranteed by the following conditions. •Measurement : Transmitted Wavefront Interferometer (OLYMPUS in-house equipment) •Temperature : 23 ± 1 centigrade •Measurement Area : 97% in pupil diameter

^{**3} Specified oil: IMMOIL-F30CC ^{**4} The MPLFLN40x objective lens is not compatible with the differential interference contrast microscopy.

DIGITAL IMAGING SOLUTION

Greater efficiency up from observation to image capture and data analysis.



Microscope digital cameras DP72

With super-high, 12.8 megapixel resolution, the DP72 offers top-of-the-line image clarity, detail and color depth. Advanced on-board cooling ensures the high sensitivity needed to capture clear images of any kind of specimen, even dark ones.

Key features:

- 12.8 megapixels
- Peltier cooling for high-sensitivity performance with low noise
- Superb color reproduction and high resolution provide top-of-the-line image quality
- 15 fps frame rate for fast, easy focusing and framing



DP25

This outstanding, high-resolution 5 megapixel color CCD camera includes accurate color reproduction and advanced color control among a wealth of features. It's also versatile enough for work with all types of specimens. Olympus analySIS software is separately required to capture images.

Key features:

- 5 megapixels
- Images in true color and accurate detail
- Trimming the live image in a high resolution at high frame rates



DP21

The DP21 provides fast (15fps) motion imaging for precise color reproduction quality and highly efficient image acquisition in production line inspections. Even very fine structures are accurately captured and displayed with outstanding clarity.

Key features:

- 2 megapixels
- Standalone type (no PC required) saves space
- Fast (15fps) frame rate for quick, easy focusing and framing
- Equipped with measurement functions (distance of 2 points, polygon area and distance between 2 circle centers) as standard

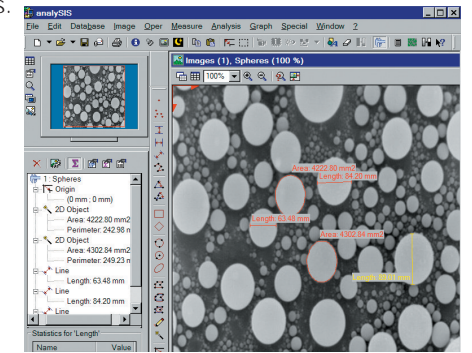


Olympus analySIS software Seamless operation from image processing, measurement and analysis to database and report generation

As one of the world leading microscope manufacturers, Olympus now offers the ideal software for analyzing digital images. Highly sophisticated — yet remarkable easy to use — the Olympus software is modular in form and adjustable to meet the needs of diverse applications. The integrated database is extremely powerful as it archives images along with all associated data. In addition to other standard features such as image acquisition, measurement/analysis and report generation, image stitching, focal imaging and many specialized materials characterization modules such as grain size and filter residue are available.

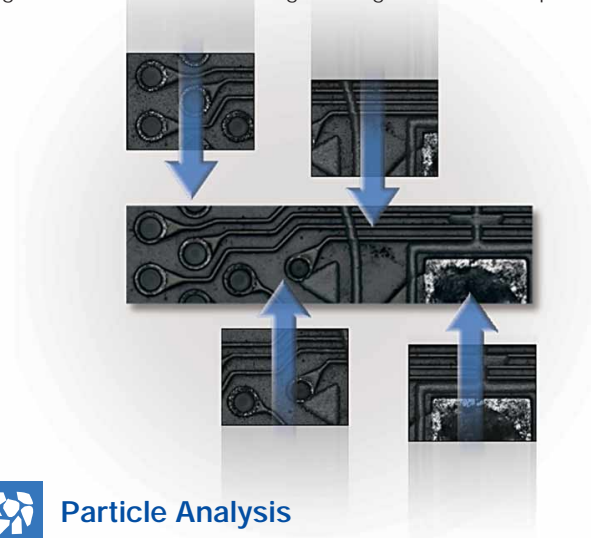
Measurement

Counting particles...measuring dimensions...calculating the distance between two lines...analySIS software handles tasks like these with ease. Results can also be saved/output together with the images.



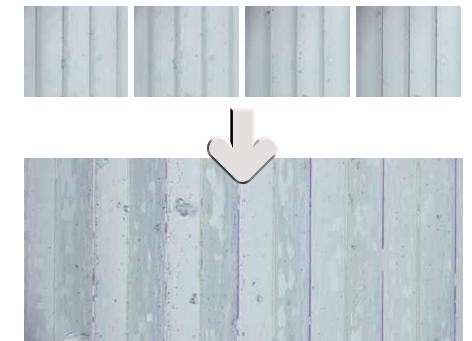
Stitching Images

Multiple adjacent images can be seamlessly and naturally stitched together into one — an easy, effective way of observing areas too large to be viewed as one image through the microscope.



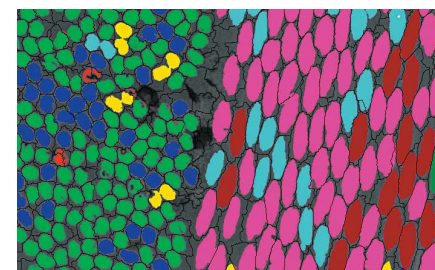
Extended Focal Image

Multiple versions of the same image, each focused at a different position, can be combined to produce a single, wholly-focused image. This function allows clear imaging of specimens with different height levels on the surface, which cannot be observed all together at the same time conventionally.



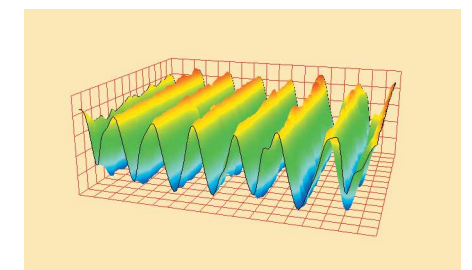
Particle Analysis

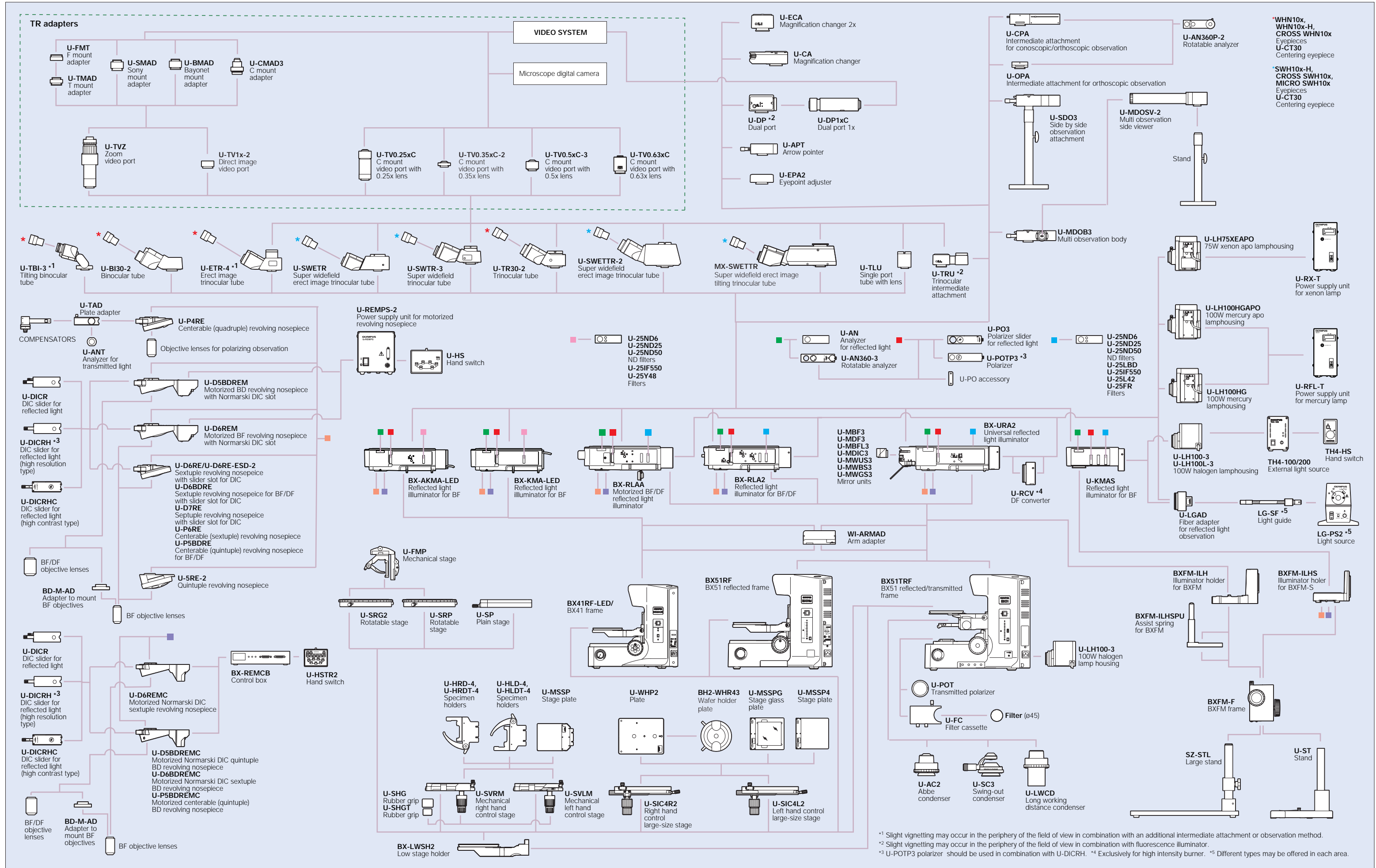
The separator function enables automatic separation of particles within an image, while threshold levels and detection areas are set through the ROI (region of interest). All particles are measured automatically, using a range of measurement parameters. The measurement data is statistically processed to enable high-level particulate analysis.



3D Image

A uniformly focused image, obtained using the extended focal point function, can be used to construct 3D images and create real 3D animation. Magnification, reduction, pan, and rotation can be performed freely, allowing the specimen to be seen as a whole and examined from any angle.





*1 Slight vignetting may occur in the periphery of the field of view in combination with an additional intermediate attachment or observation method.
 *2 Slight vignetting may occur in the periphery of the field of view in combination with fluorescence illuminator.
 *3 U-POTP3 polarizer should be used in combination with U-DICRH. *4 Exclusively for high intensity burner. *5 Different types may be offered in each area.

BX61/BX51/BX51M/BX41M-LED-ESD specifications

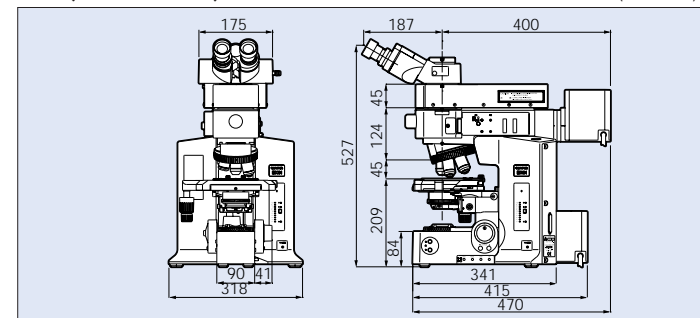
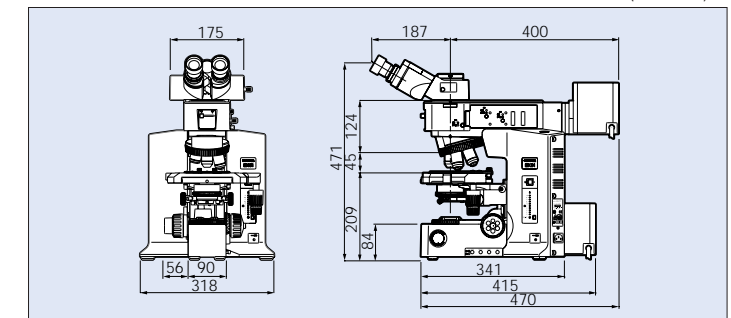
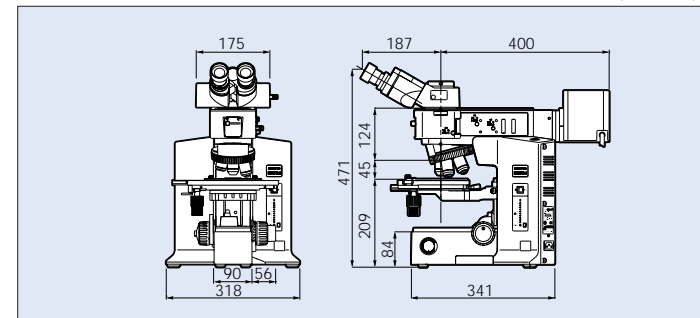
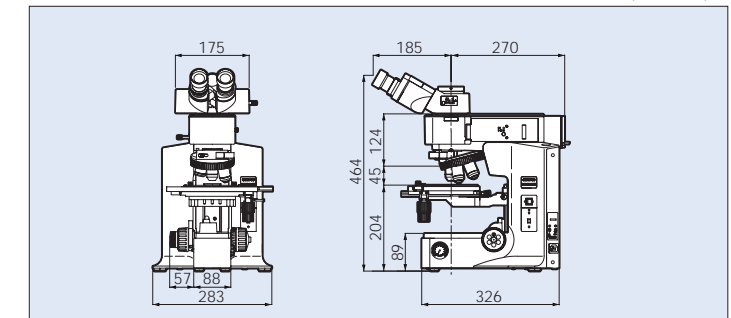
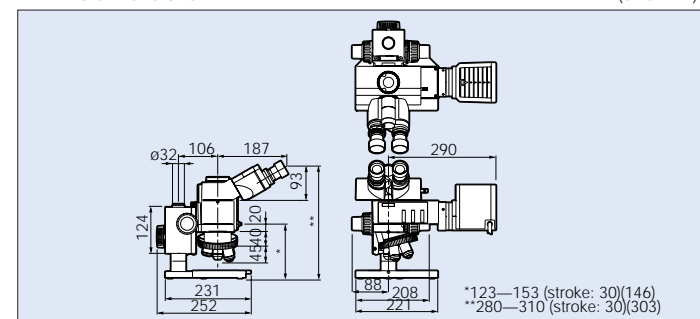
	BX61	BX51	BX51M	BX41M-LED
Optical system	UIS2 optical system (infinity-corrected)			
Microscope frame	Illumination	Reflected/transmitted		Reflected
		External 12 V 100 W light source Light preset switch LED voltage indicator Reflected/transmitted changeover switch	Built-in 12 V 100 W light source Light preset switch LED voltage indicator Reflected/transmitted changeover switch	Built-in 12 V 100 W light source Light preset switch LED voltage indicator
	Focus	Motorized focusing Stroke 25 mm Minimum graduation 0.01 μm	Stroke 25 mm Fine stroke per rotation 100 μm Minimum graduation 1 μm With upper limit stopper, torque adjustment for coarse handle	
Max. specimen height	25 mm (w/o spacer)		65 mm (w/o spacer)	
Observation tubes	Widefield (F.N. 22)	Inverted: binocular, trinocular, tilting binocular Erect: trinocular, tilting binocular		
	Super widefield (F.N. 26.5)	Inverted: trinocular Erect: trinocular, tilting trinocular		
Reflected light illumination	BF etc.	BX-RLAA Motorized BF/DF changeover Motorized AS	BX-RLA2 100 W halogen (high intensity burner, fiber illuminator mountable) BF/DF/DIC/KPO FS, AS (with centering mechanism), BF/DF interlocking ND filter	BX-AKMA-LED/BX-KMA-LED 3 W white LED BF/DIC/KPO ESD capable <i>Following features are for BX-AKMA-LED only:</i> KPO/oblique illumination AS (with centering mechanism) Oblique illumination position settings
	Reflected fluorescence	BX-RFAA Motorized 6 position turret Built-in motorized shutter With FS, AS	BX-URA2 100 W mercury lamp, 75 W xenon lamp 6 position mirror unit turret (standard: WB, WG, WU+BF etc) with FS, AS (with centering mechanism), with shutter mechanism	
Transmitted light	100W halogen Abbe/long working distance condensers Built-in transmitted light filters (LBD, ND25, ND6)		—	
Revolving nosepieces	For BF	Motorized sextuple	Sextuple, centering sextuple, septuple (optional motorized revolving nosepieces)	Quintuple, sextuple (ESD capable), septuple
	For BF/DF	Motorized quintuple, motorized sextuple, centering quintuple	Quintuple, centering quintuple, sextuple (optional motorized revolving nosepieces)	—
Stages	Coaxial left(right) handle stage: 76 (X) x 52 (Y) mm, with torque adjustment Large-size coaxial left (right) handle stage: 10 0(X) x 105 (Y) mm, with lock mechanism in Y axis			
Dimensions	Approx. 318 (W) x 602 (D) x 541 (H) mm	Approx. 318 (W) x 602 (D) x 480 (H) mm	Approx. 318 (W) x 602 (D) x 480 (H) mm	Approx. 283 (W) x 455 (D) x 480(H) mm
Weight	Approx. 25.5 kg (Microscope frame 11.4 kg)	approx. 20.8 kg (Microscope frame 10.3 kg)	Approx. 19.5 kg (Microscope frame 9.8 kg)	Approx. 14 kg (Microscope frame 6.7 kg)

BXFM specifications

	BXFM	BXFM-S
Optical system	UIS2 optical system (infinity-corrected)	
Microscope frame	Focus Stroke 30mm, Fine stroke per rotation 200 μm, Minimum graduation 2 μm, with torque adjustment for coarse handle	
Observation tubes	Widefield (F.N. 22)	For inverted image: binocular, trinocular, tilting binocular For erect image: trinocular, tilting binocular
	Super widefield (F.N. 26.5)	For inverted image: trinocular For erect image: trinocular, tilting trinocular
Reflected light illumination	BF etc.	BX-RLA2 100 W halogen (high intensity burner, fiber illuminator mountable) BF/DF/DIC/KPO FS, AS (with centering mechanism), with shutter mechanism
	Reflected fluorescence	BX-URA2 100 W mercury lamp, 75 W xenon lamp 6 position mirror unit turret (standard: WB, WG, WU+BF etc) with FS, AS (with centering mechanism), with shutter mechanism
Revolving nosepiece	For BF	Sextuple, centering sextuple, septuple (optional motorized revolving nosepieces)
	For BF/DF	Quintuple, centering quintuple, sextuple (optional motorized revolving nosepieces)
Dimensions	Approx. 248 (W) x 587 (D) x 249 (H) mm	Approx. 394 (W) x 334 (D) x 276 (H) mm
Weight	Approx. 9 kg (standard combination)	

MX51 specifications

Optics	UIS2 optics (infinity-corrected system)	
Microscope stand	2-guide rack and pinion method Coarse and fine co-axial Z-axis control stroke 32mm (2mm upper and 30mm below from the focal plane) The same stroke 15mm (combination with transmitted illumination) Stroke per rotation of fine Z-axis control 0.1 mm (1 unit 1 μm) Coarse handle torque adjustment Coarse handle upper limit lever	
Illumination		BX-RLA2 Brightfield/Darkfield illuminator
	Contrast changeover method	BF-DF slide method
	Applicable observation mode	① Brightfield ② Darkfield ③ Nomarski DIC ④ Polarized light ⑤ IR
Lamphousing	12V100W Halogen Lamphouse: U-LH100L-3	Mercury lamp house: U-LH100HGAP0 External power supply BH2-RFL-T3 needed Power supply is integrated in MX51
Transmitted illumination	Brightfield MX-TILLK combined with fiber light guide illumination (configured with MX-SiC6R2)	
Power supply unit	Rated voltage: 100-120/220-240V~1.8A/0.8A 50/60Hz Continuous light intensity dial	
Observation tube	U-BI30-2 Widefield binocular, U-TR30-2 Widefield trinocular, U-ETR4 Widefield erect image trinocular (F.N. 22) U-SWTR-3 Super widefield trinocular, MX-SWETTR/U-SWETTR-5 Super widefield erect image tilting trinocular (F.N. 26.5)	
Revolving nosepiece	U-5RE-2, U-6RE U-D5BDRE, U-D6BDRE, U-P5BDRE (with slider slot for DIC Prism)	
Stage	U-SIC4R2/SIC4L2 Coaxial right/left-hand control 4" x 4" stage	MX-SIC6R2 Coaxial right/left-hand control 6" x 6" stage
	Drive method: rack and pinion method Y axis stopper: lever method	Drive method: Belt method Stroke: 158(X) x 158 (Y) mm Clutch method: 2 clutch plates (Built-in-clutch ON/OFF handle) Holder dimensions: 200 x 200mm Transmitted light area: 100 x 100mm
Dimensions/weight	Dimensions: Approx. 430(W) x 591(D) x 495(H)mm Weight: Approx. 26kg (Stand Approx. 11kg)	

BX61 (AF combination) dimensions

BX51 dimensions

BX51M dimensions

BX41M-LED+BX-AKMA-LED dimensions

BXFM-S dimensions

MX51 dimensions
