

OLYMPUS®

Your Vision, Our Future

Upright Metallurgical Microscope

BXiS

ryf ag



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BXiS Metallurgical Microscope System: Seamless Integration of Digital Imaging



BXiS a System to Fit Individual Style for Any Application Today and Tomorrow

Today's diverse applications require optical inspection systems that can provide cost-effective imaging in a variety of ways.

Whether performing basic measuring using white light imaging or highly demanding material identification using polarized light that requires advanced color fidelity, Olympus has a flexible solution to fit individual needs.

BXiS is an individual Streamlined Style.

Olympus solutions span our advanced microscopy products to application specific digital cameras to provide the highest resolution and color fidelity available. The Olympus total solution is tied together with advanced imaging software that provides integrated operation from basic image capture to image processing, report generation, data export and global networking of both data, images and reports.

BXiS is an individual System.

Olympus offers flexibility to create a solution that fits unique environment workflow and needs with convenient, time-saving tools that make even routine activities a snap.

BXiS is an individual Solution.

With the BXiS, the iS represents individual Style.



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Versatile System

Olympus' Microscope System Solutions Support All Work Levels

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Streamlined Workflow

OLYMPUS Stream Software Adapts to Individual Requirement

BXiS Simplifies Image-Aquisition Workflow

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System Diagrams, Specifications

BX51 / BX51M / BXFM System Diagram

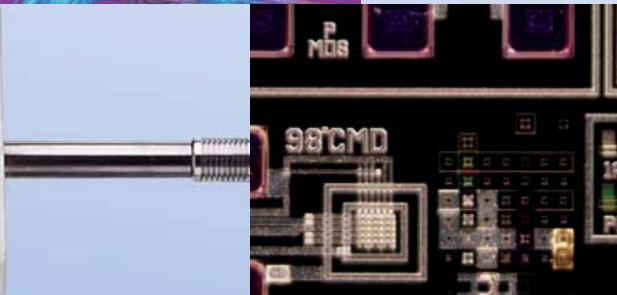
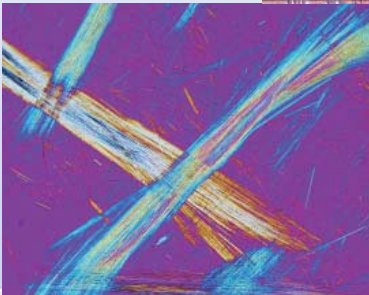
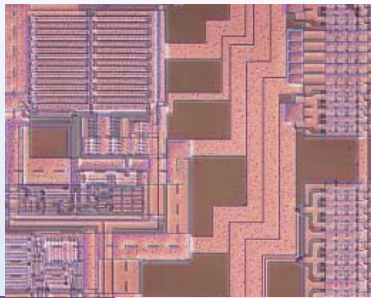
BX61 System Diagram

BX41M-LED System Diagram

BX51 IR System Diagram

Specifications

Dimensions



A Versatile System To Fit Individual Style

Olympus Is Dedicated to Making Microscope System Solutions that Supports Individual Work on All Levels

Keep Workflow Streamlined

Having the enough time is just as important as the right working conditions. That's why the BXiS system's imaging and control software can be personalized to fit unique process flow. An easy-to-use interface guides the user effortlessly through every step from image adjustment image capture, measurements, report creations and data basing or whatever is needed to achieve. As a result, completing tasks is more efficient regardless of their complexity.

Tailor to Individual Needs

The fully adaptable BXiS concept shows how we're able to offer manual or automated systems that fit unique needs and budget. Creating and tailoring the BXiS system is easy.

Easily Expands To Future Applications

With the BXiS system, be prepared not only for today's applications but for tomorrow's as well. Whatever the future may bring, to keep with advances in technology with Olympus BXiS system solutions.





BX51RF/BX-RLA2/DP22

Keep Workflow Streamlined

OLYMPUS Stream Software Adapts to Individual Requirement

User Interface Function

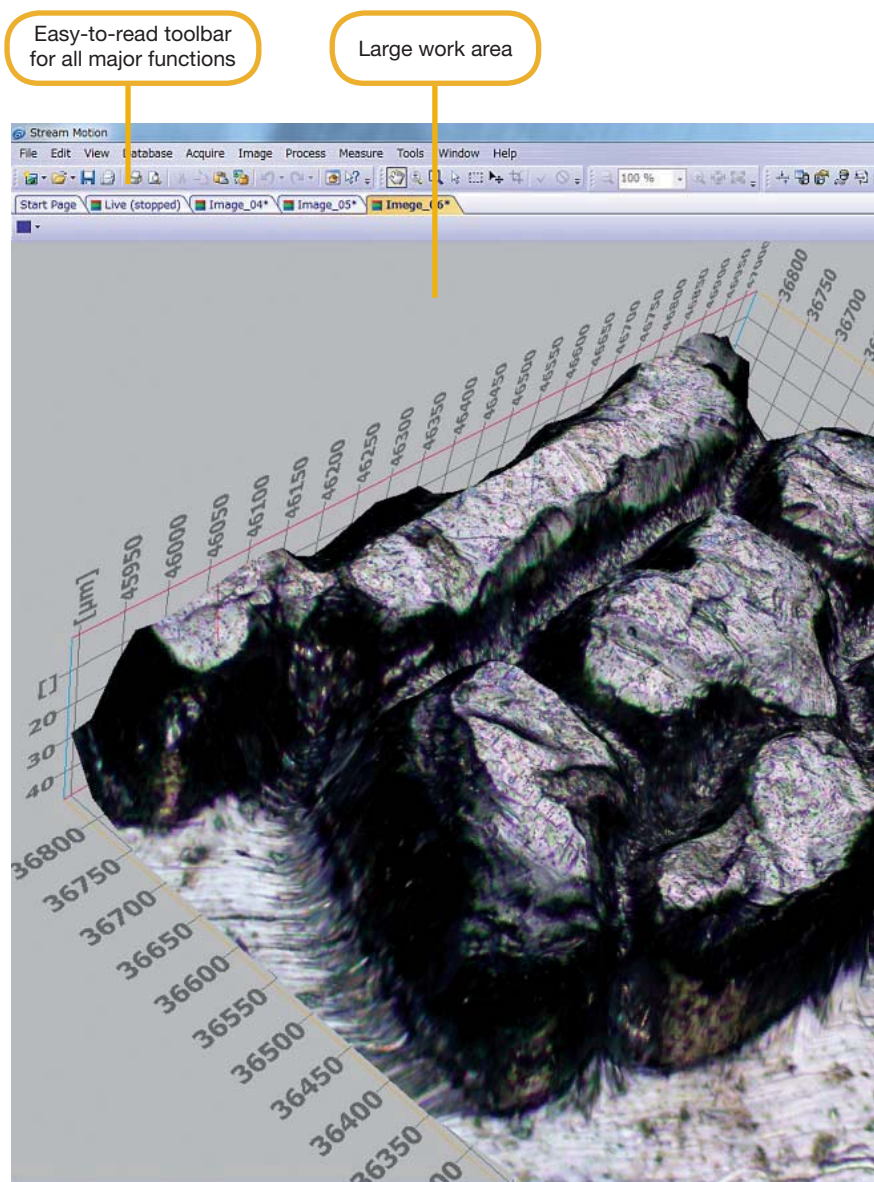
While progressing from image capture to report creation, the necessary tool windows are always displayed at every stage, providing quick and easy access to control parameters.

Dynamic User Interface

Depending on individual needs, the layout of the tool window can be arranged to fit individual workflows. Additionally, customized layouts with all the necessary functions can be created for each activity.

My Function

Create intuitive workflows based on the most frequently used functions, simplifying repetitive tasks so that even new users can operate the software easily and efficiently.



Ready
OLYMPUS Stream Motion user interface example

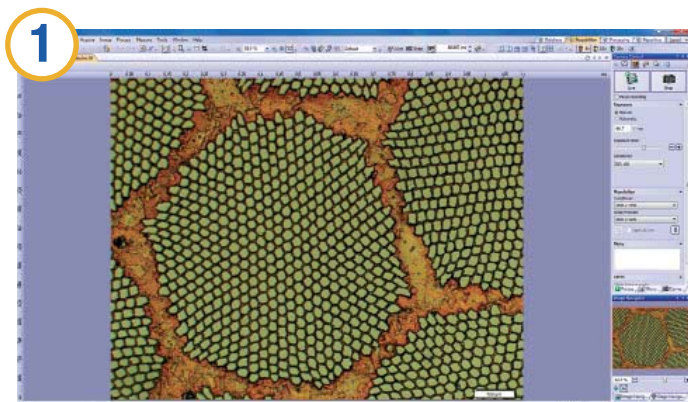
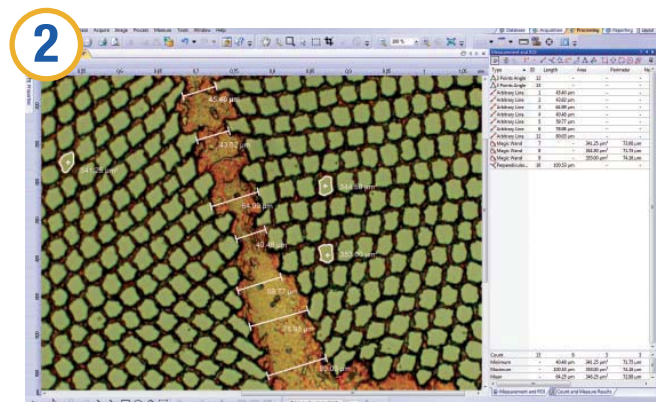


Image Acquisition

Place sample on the system and adjust the optics for a crisp, pleasing image.

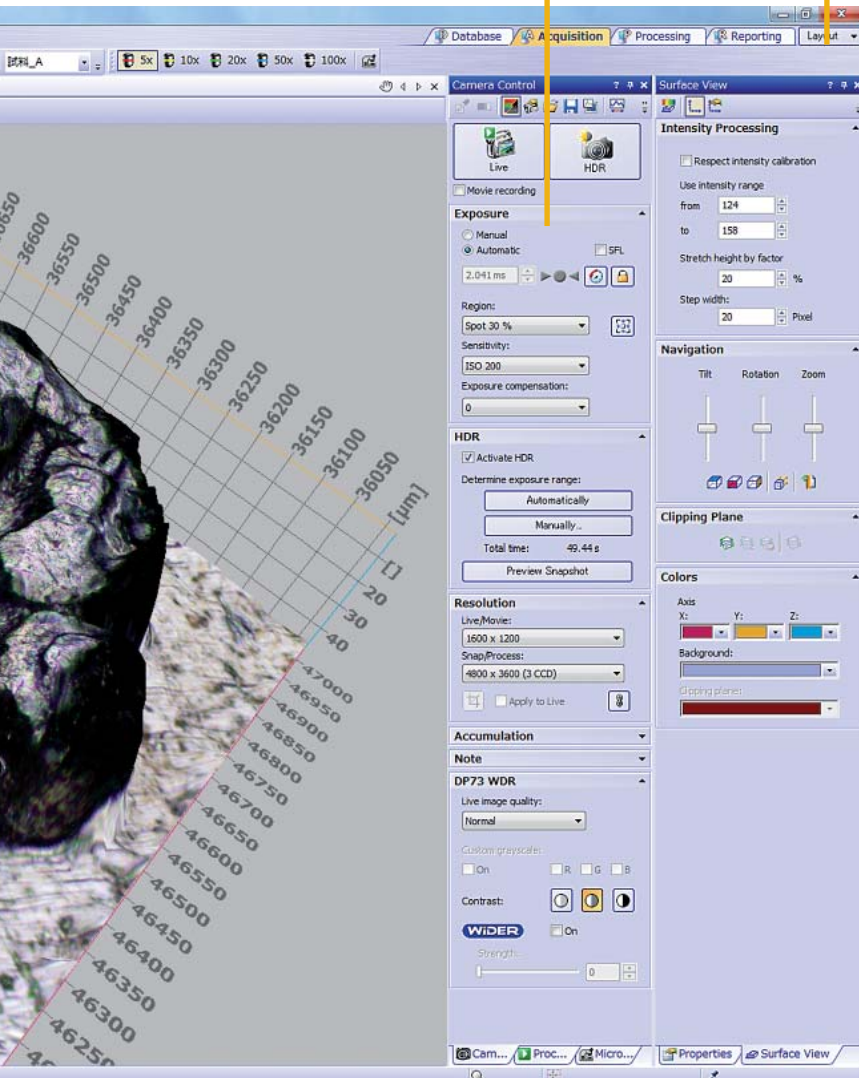


Measurements

Capture an image with a simple mouse click and measure it adding enhancements with advanced image-processing techniques.

Tool windows can be moved, hidden, or docked to the side

Tab workflow for quick access between tasks



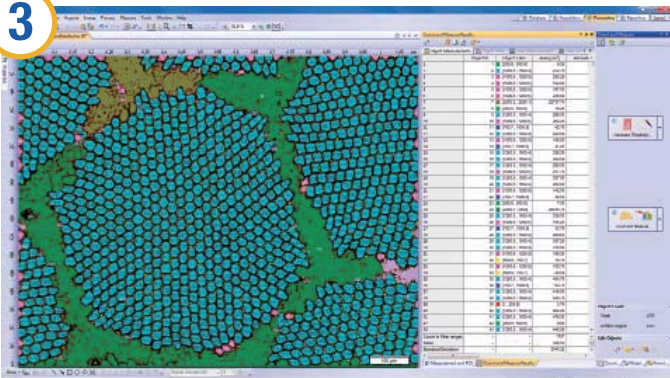
Microsoft Office Integration

OLYMPUS Stream offers complete integration with Microsoft Word and Microsoft PowerPoint.* This allows for the creation of professional reports and presentations accommodating company templates including headers and footers.

OLYMPUS Stream uses a dedicated menu and toolbar that is integrated into the preferred Microsoft Office package for an improved image handling experience. Tables and graphs can also be easily exported into Microsoft Excel for extended processing. Due to a unique compression method, OLYMPUS Stream ensures report files are a reasonable size for easier data exchange by email.

*Microsoft PowerPoint Assistant is optional

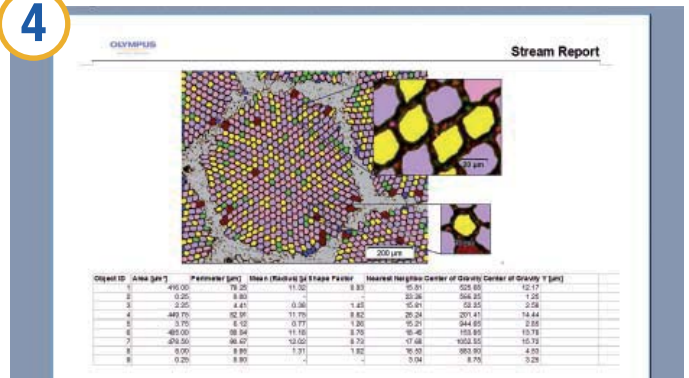
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Object Detection

Make a quick measurement with the mouse, or use preset particle-counting applications activated with a mouse click.

4

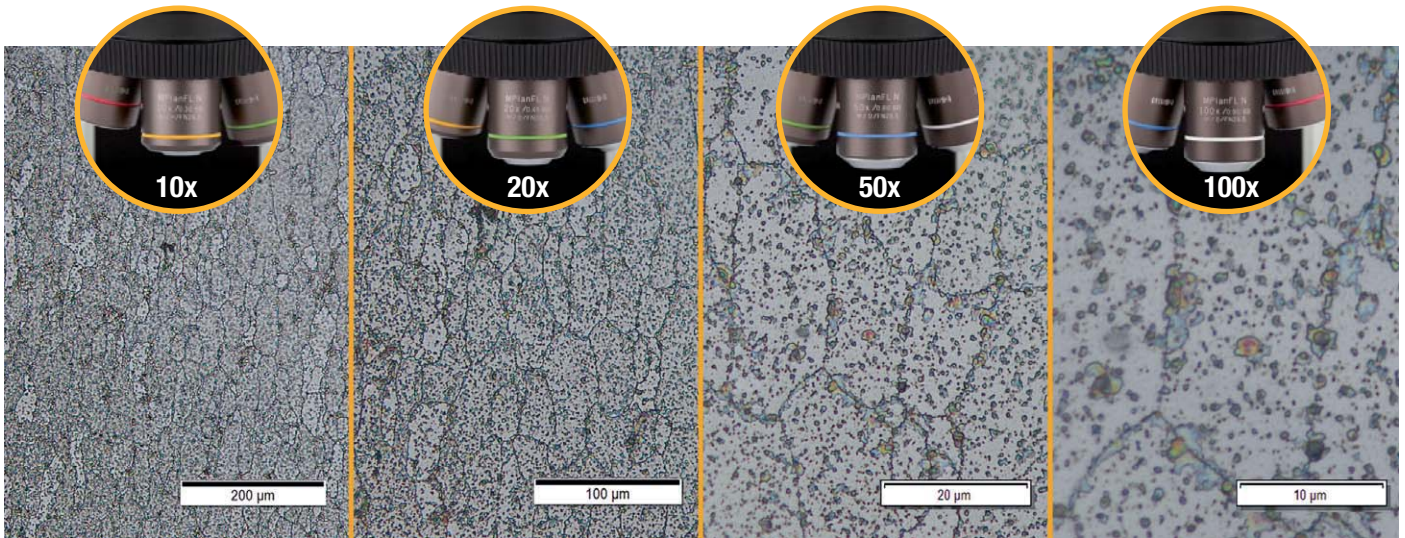


Report Generation

Save data and export it to a customized report, which can be edited in Microsoft Word.

Keep Workflow Streamlined

BXiS Simplifies Image-Acquisition Workflow



Coded or motorized nosepiece ensure correct magnification calibration.

Magnification Readout

Accurate measurements depend on correct magnification settings. The BXiS provides this critical capability automatically with a manual coded system or via a fully motorized configuration. The objective settings are automatically reflected in the scale and measurement results displayed on the monitor and output to reports.

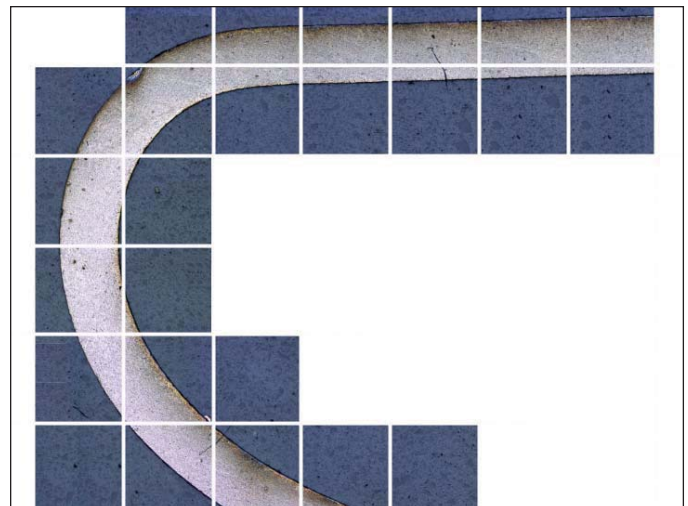
Quality Control and Traceability

For quality control and traceability purposes, the OLYMPUS Stream software creates a calibration report for important information, such as magnification and calibrated pixel values, after the initial installation. The Info Stamp created from updated calibration information can be overlaid on the acquired image and report creation.



Instant Extended Focus Image (EFI)

When combined with the OLYMPUS Stream software, Instant Extended Focus Image provides easy images for samples that extend beyond the depth of focus. The manual EFI lets the smooth focus adjustment to combine many images in the z axis, providing one combined output that can be used for visualization or measuring in x and y.



Manual Multiple Image Alignment (MIA)

OLYMPUS Stream software provides Manual Multiple Image Alignment to enable the creation of panoramic images of samples that extend beyond the field of view. The simple step-by-step process quickly allows for the combining of images. The OLYMPUS Stream software then rapidly stitches them together, providing an output ready for simple visualization or complex measurement.

BXiS Provides Fatigue Free Operation

Ergonomically Comfort

Manual or motorized systems (BX-REMCB) can be outfitted with tilting eyetubes to provide a good ergonomic fit for all operators. The focus and stage controls are also adjustable to right- or left-hand operation to fit the system to the operator. The BXiS is designed to suits individual needs for comfort and easy, precise operation.



Easy-to-use design (e.g. tilting tube and fine focusing knob attaches to either side)



Tailor for Individual Need

BXiS Offers the Perfect System for Unique Samples and Solutions

Stage and Arm Adapters

The fully integrated vertical illuminator accommodates large specimen heights. In addition, a variety of stage and upper arm adapters can be added to the BX51M and BX41M-LED to accommodate specimens up to 65 mm in height. Besides the

reflected light illuminator, integrated into the microscope arm provides an extra degree of flexibility by inserting an arm adapter between the microscope and the illuminator.

BXiS Motorized Microscopes — BX61 Motorized Operation

With the BX61 microscope, complex operation settings such as illumination level, lens selection and aperture setting, can be set to operate from a single key, either on the microscope keypad or via the PC. This feature makes it easy to reproduce observation conditions with the touch of a single button. A variety of motorized modules, including nosepieces and illuminators provide full flexibility.

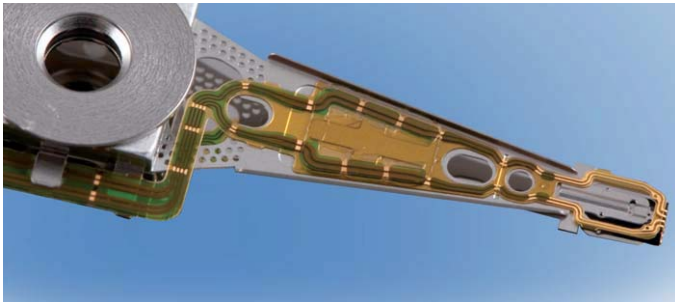
Laser-autofocus U-AFA2M

For excellence in fast, reproducible focusing, the BX61 can be fitted with the U-AFA2M autofocus unit. Utilizing an active multispot laser, the autofocus can accommodate a wide variety of specimens with fast, reproducible active tracking focusing. The U-AFA2M is compatible with brightfield, darkfield, differential interference contrast (DIC), and simple polarized-light observations.



BX61TRF/BX-RLAA/U-AFA2M/DP73

BXiS Microelectronics Inspection Microscope — BX41M-LED



Close up image of magnetic head

Electrostatic Discharge (ESD) Protection

The BX41M-LED has an ESD dissipation capability that protects electronic devices from static electricity, the human body, or nearby environments found in the laboratory or shop floor.

LED Illumination

Olympus has selected white light LED that matches the color characteristics of conventional halogen bulbs. The use of LED allows color characteristics of the illumination to be maintained regardless of the intensity. LEDs provide efficient, long-life illumination that is ideal for the inspection of electronic parts and assemblies. The BX41M can be outfitted with a unique LED driven illuminator (BX-AKMA-LED) that allows creation of off-axis (oblique) illumination to accentuate minute topographical features of any sample. The unique aperture design is fully adjustable by the user to provide flexibility to adjust for all samples.



BX41RF-LED/BX-AKMA-LED/DP22

BXiS Modular Microscope — BXFM

System Integration

The BXiS can also be adapted to special applications or integrated into other instruments. The modular construction provides for straightforward adaptation to unique environments and configurations with a variety of special small illuminators and fixturing mounts.



BXFM/BX-RLA2

Tailor to Individual Needs

BXiS Provides a Range of Objectives

Olympus offers a wide variety of objectives to suit every observation technique. Select the right lens for unique applications from our family of over 150 objectives.

UIS2 Objective Series

Color fidelity is important for accurate, efficient inspection. The UIS2 objective series yields natural color reproduction by combining carefully selected high-transmittance glass and advanced coating technology.

What's more, since the total optical system, including the tube lens, is designed to reproduce natural color, clear images faithful to the sample are obtained particularly with digital imaging. For specialized purposes, Olympus offers a wide variety of objectives, including high-resolution, polarization, and super-long-distance working objectives.

Wavefront Aberration Control

When multiple objective of the same type are used for high-level research or system integration, optical performance often must be standardized for all objectives. When this need arises, Olympus UIS2 objectives go far beyond conventional numerical aperture (NA) and working distance (WD) performance standards by providing wavefront aberration control, minimizing aberrations that lower resolution.

MPLAPON Objective Series

The MPLAPON objective series are high-performance lenses offering chromatic aberration control for excellence in color reproduction and high NA for unmatched resolution. They provide optical performance wavefront aberration control with a Strehl ratio of >95%, making them the world-standard universal objective. This series is compatible with the U-AFA2M active-laser autofocus unit, differential interference contrast, or simple polarized light observation.

LCD Inspection Lens Series - LCPLFLN-LCD

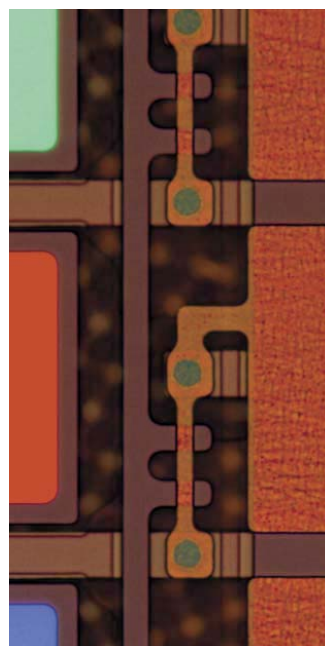
LCPLFLN objectives are designed for liquid crystal display (LCD) imaging. Inspection of LCD circuitry requires observation through a glass substrate. The LCPLFLN-LCD series provides clear imaging by correcting spherical aberrations that might cause a problem during observation. With the use of a correction collar, 0-1.2 mm glass thicknesses are adjustable for 20x and 50x objectives, and 0-0.7 mm thicknesses are adjustable for the 100x objective.

IR Imaging Lens Series - LCPLN-IR

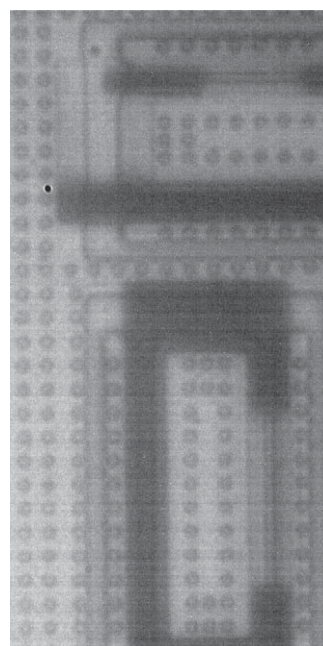
Olympus IR objectives can be used for conventional microscopy and for semiconductor inspection, measurement, and processing systems for when looking inside the sample that is opaque to white light is needed. 5x to 100x infra-red (IR) objectives are available with chromatic aberration correction from visible light through the near infrared range. By rotating the LCPLN-IR series correction collar, aberration caused by sample thickness is easily corrected, and a clear image obtained, with a single objective.



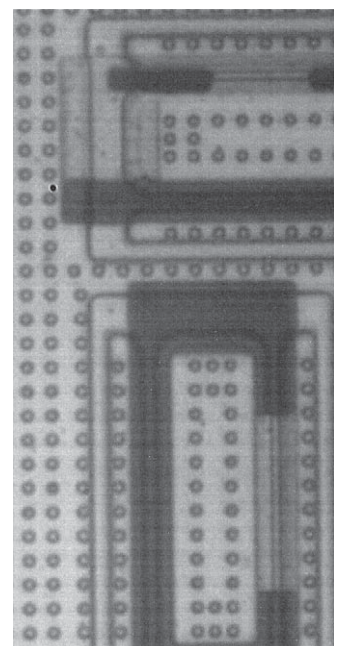
Without compensation



Compensation



Without compensation



Compensation

LCD Circuit Pattern Taken with LCPLFLN-LCD

Semiconductor Circuit Under Silicon Layer Taken with LCPLN-IR

Tailor to Individual Needs

Olympus Broad Range of Digital Cameras

DP73

The DP73 is a 17.28M-pixel cooled digital color camera with pixel-shift technology that attains the highest resolution, superior sensitivity and precise color fidelity in the Olympus lineup. This camera is compatible with all observation methods and produces contrast balanced images using a unique dynamic range technology.

DP27

This high-resolution 5M-pixel color CCD camera provides optimum true color performance for all industrial applications and imaging techniques. The DP27 incorporates high speed progressive scanning with USB3.0 connectivity.

DP22

This 2.8M-pixel color CCD camera can be used as a complete stand-alone model (no PC required). The control box incorporates the 12 most frequently used measurement functions for efficient inspection of industrial parts.



Comparison Table for Camera Selection

		Universal model		Standard model				Introductory model			Stand-alone model	B/W model
		Outstanding performance	First-rate Flexibility	Best lateral resolution	Excellent sensitivity	Exceptional Color Fidelity	Impressive image quality	Full HD imaging	For standard applications	Cost performance	Space saving	For IR observation
		DP73	XC10	SC100	XC50	DP27	UC50	SC50	UC30	SC30	DP22	XM10IR
Image sensor		1/1.8 in. Color CCD	2/3 in. Color CCD	1/2.3 in. Color CMOS	2/3 in. Color CCD	2/3 in. Color CCD	2/3 in. Color CCD	1/2.5 in. Color CMOS	1/1.8 in. Color CCD	1/2 in. Color CMOS	1/1.8 in. Color CCD	2/3 in. Mono CCD
Pixel density (megapixel)		17.3*1	1.4	10.0	5.0	5.0	5.0	5.0	3.2	3.3	2.8	1.4
Frame rate (fps)		27~15	50~15	42~3.2	24.5~4.5	30~15	24.5~4.5	55-15	35~7	49~10	28~25	80~15
ADC*2		14 bit	14 bit	12 bit	14 bit	12 bit	14 bit	12 bit	14 bit	10 bit	12 bit	14bit
Observation	Bright condition (e.g. Brightfield)	■	■	■	■	■	■	■	■	■	■	
	Low light condition (e.g. Darkfield)	■	■	■	■	■	■	■	■	■	■	
	Very dark light condition (e.g. Fluorescence)	■	■		■							
	IR condition											■
Measurement / Analysis	Find minute difference at low magnification	■		■	■	■	■	■				
	High accuracy measurement/ analysis	■		■	■	■	■	■				
	Thresholding analysis (B/W mode)	■	■		■		■	■	■			■

*1 Pixel-shift *2 Analog-to-digital converter. Actual bit depth of the camera depends on software used.

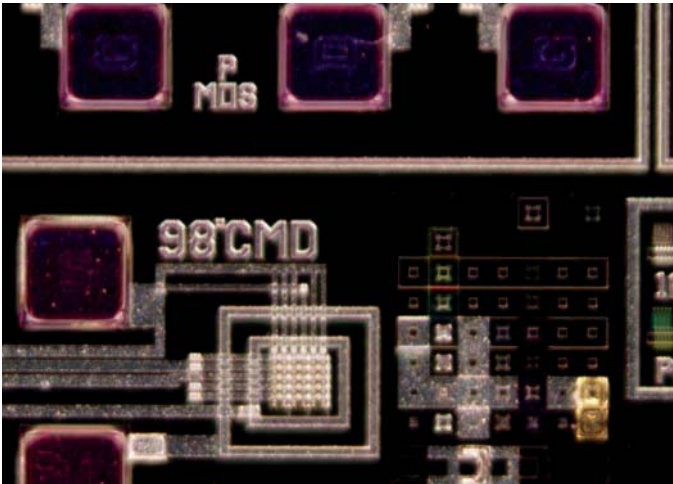
Projection magnifications	Video camera adapter	Projection area (F.N.)										
		DP73	XC10	SC100	XC50	DP27	UC50	SC50	UC30	SC30	DP22	XM10IR
1X	U-TV1XC	8.8	11.0	7.0	11.0	10.7	11.0	7.1	8.8	8.0	8.8	11.0
0.63X	U-TV0.63XC	14.0	17.5	11.0	17.5	17	17.5	11.3	14.0	12.7	14.0	-
0.5X	U-TV0.5XC	17.6*3	22.0*3	13.9	22.0*3	21.4*3	22.0*3	14.2	17.6	16.0	17.6	-
0.35X	U-TV0.35XC	-	-	19.9	-	-	-	20.3*3	-	22.0*3	-	-

*3 Insufficient peripheral light intensity or vignetting may be distinct depending on optical system.

Practical Field of View (mm) = Projection Area (field number) / Objective Magnifications

Actual camera sensitivity is dependent on the level of light reflectance from the sample. This level of light reflectance is dependent on observation method chosen and sample material.

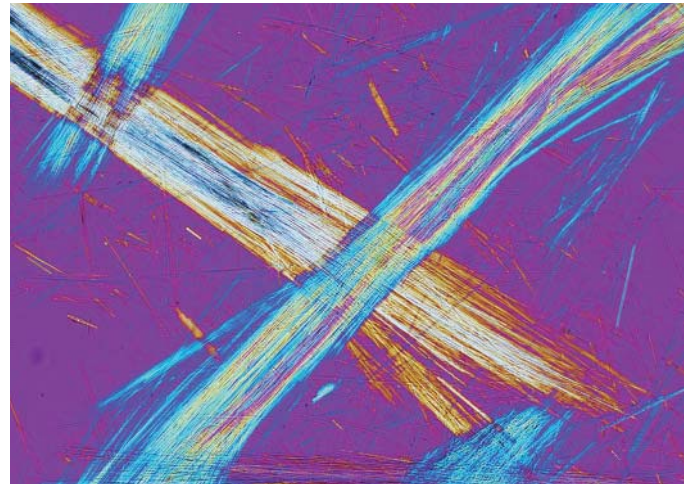
BXiS Gets Images of Various Observation Methods



Surface mounting board

Darkfield

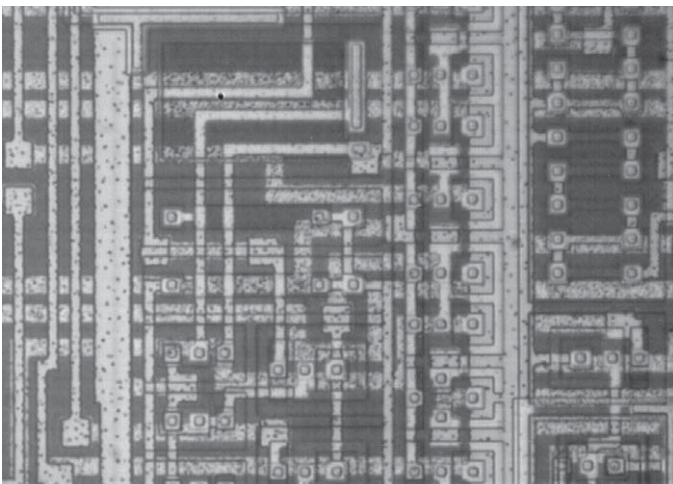
Darkfield allows the observation of scattered or diffracted light from the specimen. The light from the lamp travels through ring-form illumination optics in the illuminator and is focused on the specimen. The light from the specimen is reflected only by imperfections in the z axis. The user can identify the existence of even a minute scratch or flaw down to the 8 nm level—smaller than the resolving power limit of an optical microscope. Darkfield is ideal for detecting minute scratches or flaws on a specimen and examining mirror surface specimens, including wafers.



Asbestos

Polarized Light

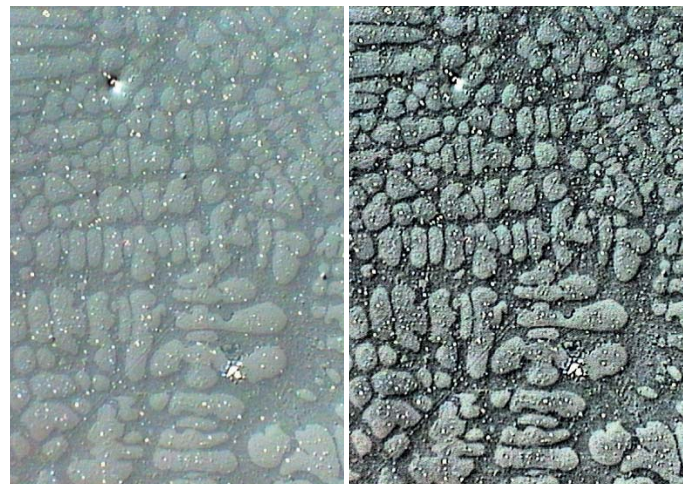
This microscopic observation technique utilizes polarized light generated by a set of filters (analyzer and polarizer). The characteristics of the sample directly affect the intensity of the light reflected through the system. It is suitable for metallurgical structures (i.e., growth pattern of graphite on nodular casting iron), minerals, and LCDs and semiconductor materials.



Semiconductor circuit under silicon layer

Infra-Red (IR)

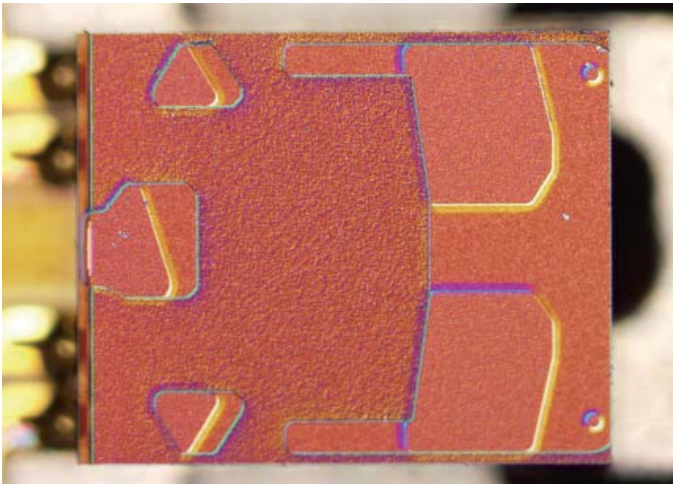
IR observation is the preferred method of nondestructively inspecting the inside of electronic devices constructed with silicon or glass that easily transmit IR wavelengths of light. IR objectives are also used with near-infrared techniques such as Raman spectroscopy and YAG laser repair applications.



Dendrite

Processing Filter

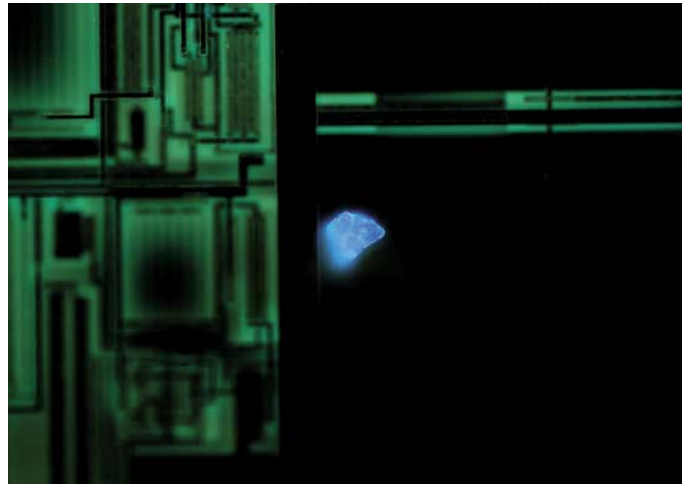
OLYMPUS Stream has a variety of filters for edge detection, smoothing, and other purposes. Visualize image features by enhancing and modifying with a processing filter on the acquired image. For better results, check or adjust the filter results in a preview display.



Magnetic head

Differential Interference Contrast (DIC)

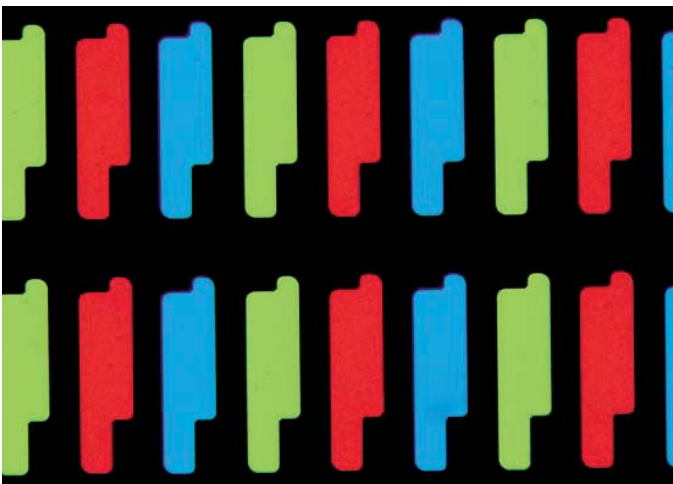
DIC is a microscopic observation technique in which the height difference of a specimen not detectable with brightfield becomes a relief-like or three-dimensional image with improved contrast. This technique, based on polarized light, can be customized with a choice of three specially designed prisms. It is ideal for examining specimens with very minute height differences, including metallurgical structures, minerals, magnetic heads, and hard-disk media and polished wafer surfaces.



Particle on semiconductor wafer

Fluorescence

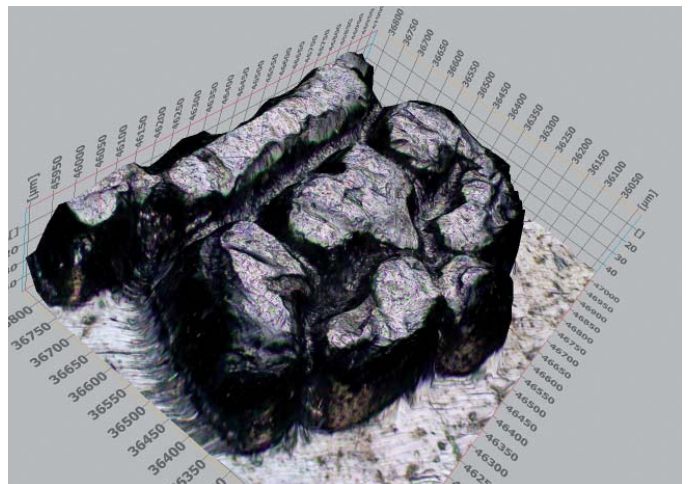
This technique is used for specimens that fluoresce (emit light of a different wavelength) when illuminated with a specially designed filter module that can be tailored to application. It is suitable for inspection of contamination on semiconductor wafers, photo-resist residues, and detection of cracks through the use of fluorescent dye. An optional apochromatic lamp house collector lens system can be added to compensate for chromatic aberrations from visible light to near-infrared light.



LCD color filter

Transmitted Light Observation

For transparent samples such as LCDs, plastics and glass materials, true transmitted light observation is available by using a variety of transmitted light condensers. Examine samples in brightfield, darkfield, DIC, and polarized imaging in transmitted light, all in one convenient system.

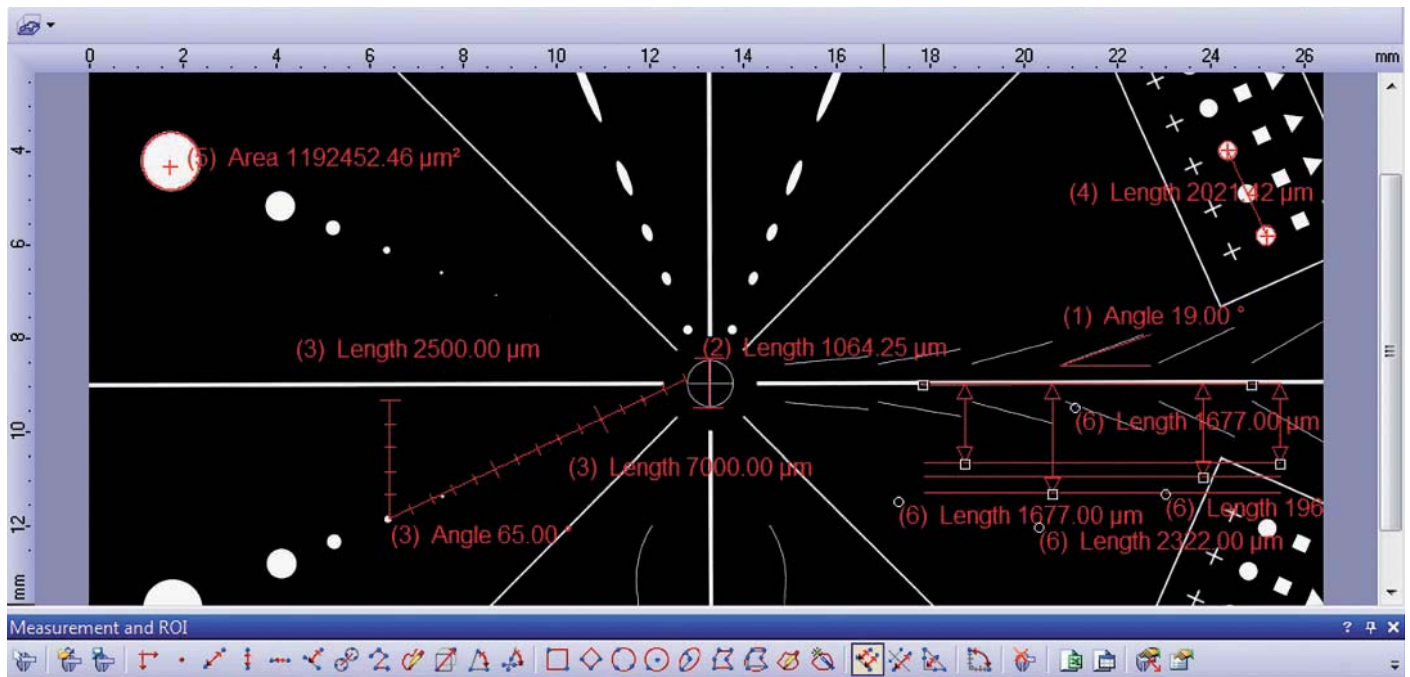


Coin detail

Automated 3D Image Creation (EFI)

Using the BX61 or external motorized focus units, users can quickly record and combine images for samples that extend beyond the depth of focus. The EFI image combines all of the individual focus levels into a single 3D image at the touch of a button. The resulting 3D data set can be used for 3D visualization or measurements of heights and distances.

From Simple Measurements to Complex Image Analysis

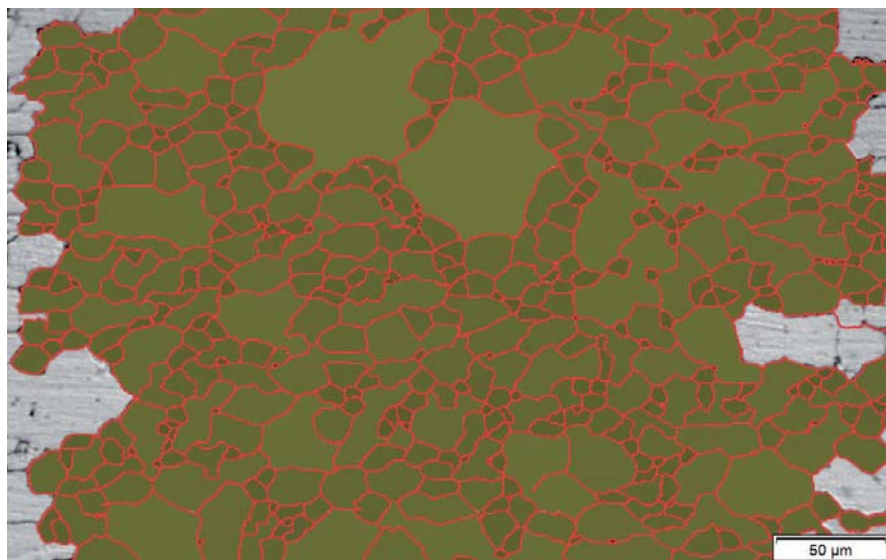


Measurement options

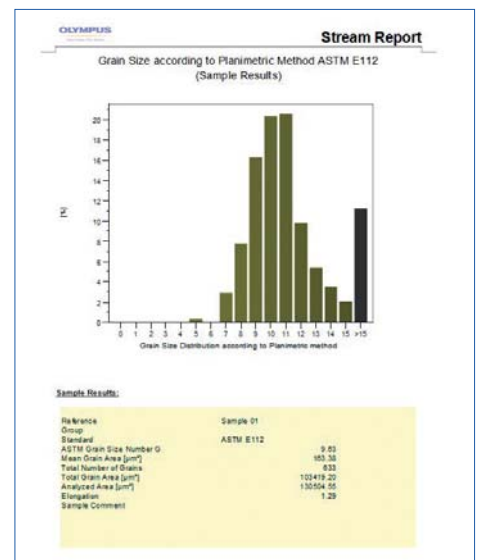
Measurement

For quality control and inspection, measurement is an essential function. Even the entry-level OLYMPUS Stream Start includes interactive measurement functions such as distances, angles,

rectangles, circles, ellipses, and polygons. All measured results are saved with the image files for further documentation.



Example: object detection and report for Grains Planimetric



Materials Science Solutions

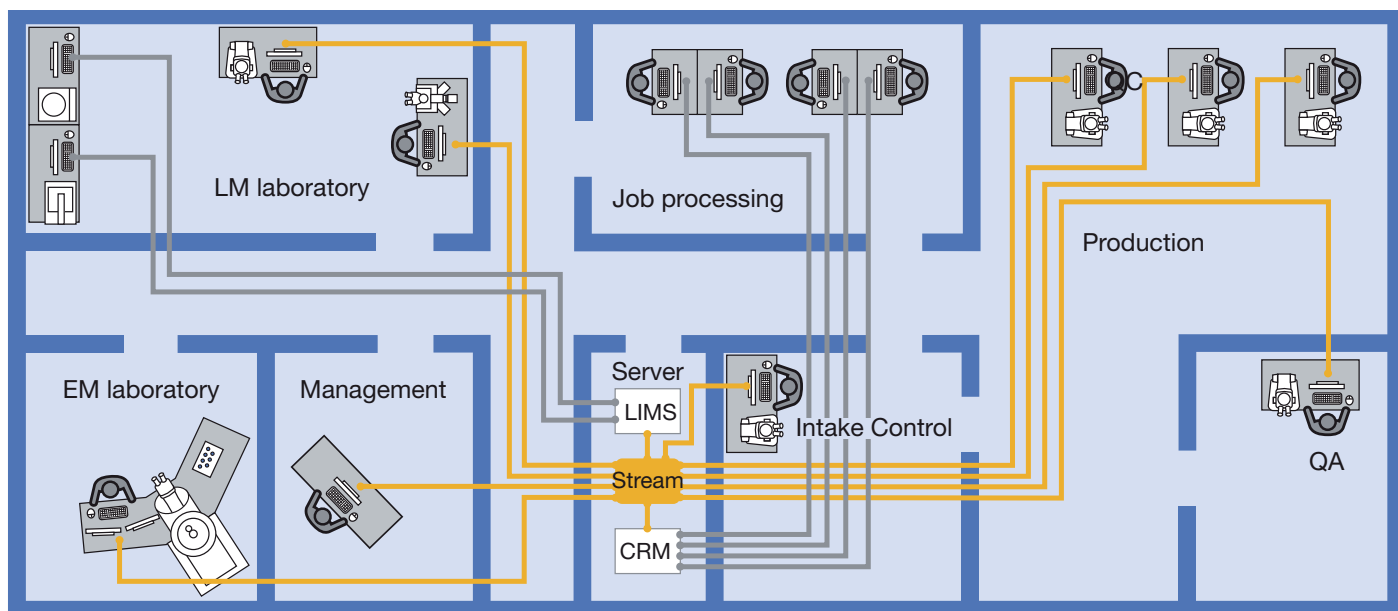
OLYMPUS Stream offers an intuitive, workflow-oriented interface for complex image analysis. At the click of a button, the most complex image analysis tasks can be executed quickly, precisely, and in compliance with most common industrial standards. With a significant reduction in processing time for repeated tasks, materials scientists can concentrate on analysis and research. Modular add in for inclusions and intercept charts are easily added at any time.

Count and Measure

Object detection and size distribution measurement are among the most important applications in digital imaging. OLYMPUS Stream incorporates a detection engine that utilizes threshold methods to reliably separate objects (e.g., particles, scratches) from the background.

Easily Expands to Future Applications

BXiS Expands to Meet Future Needs



Office network

Database Management

When it's necessary to efficiently browse through thousands of images and other files created in the past, OLYMPUS Stream streamlines workflow from image capture through data management.

The software incorporates a client-server database based on Microsoft SQL Server Express. Allowing the assignment of user-definable fields (creation date, project ID, parts number, deadline, and metadata) into image and other files and folders, permitting efficient data sharing and quick searches.

Simple Network Connections

The OLYMPUS Stream Netcam solution lets any authorized network user connect to OLYMPUS Stream PC and visualize the same image in real time with a web browser. What's more, the DP22 or DP27 also provides self-contained integration into local networks, allowing work to be shared across the office or around the world.

Microsoft Office 2013

Stay up to date with OLYMPUS Stream. The report tool and presentation assistant can use the latest version of Microsoft Office suite.

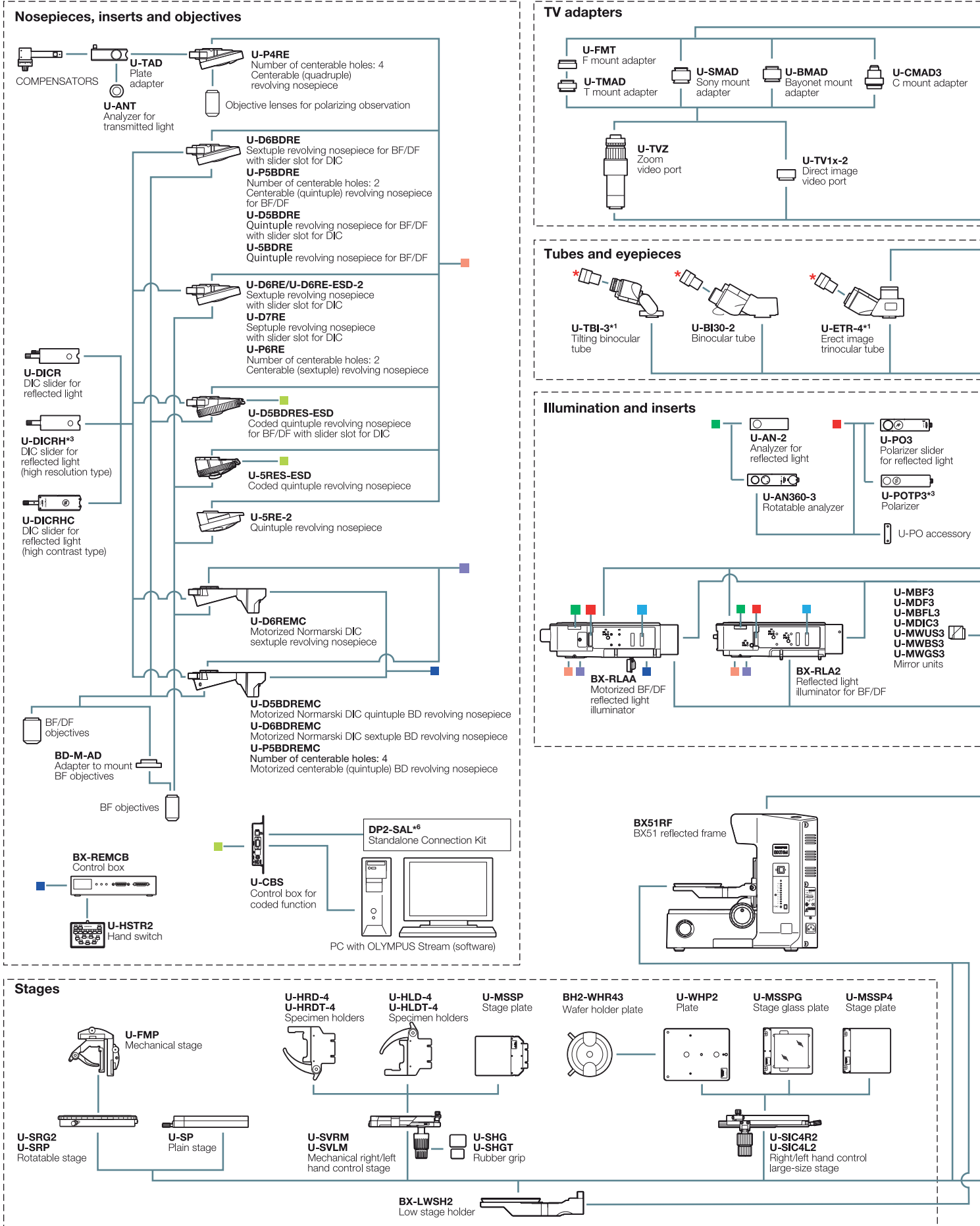
* Microsoft Office 2007, 2010 are also supported.

Windows 8.1

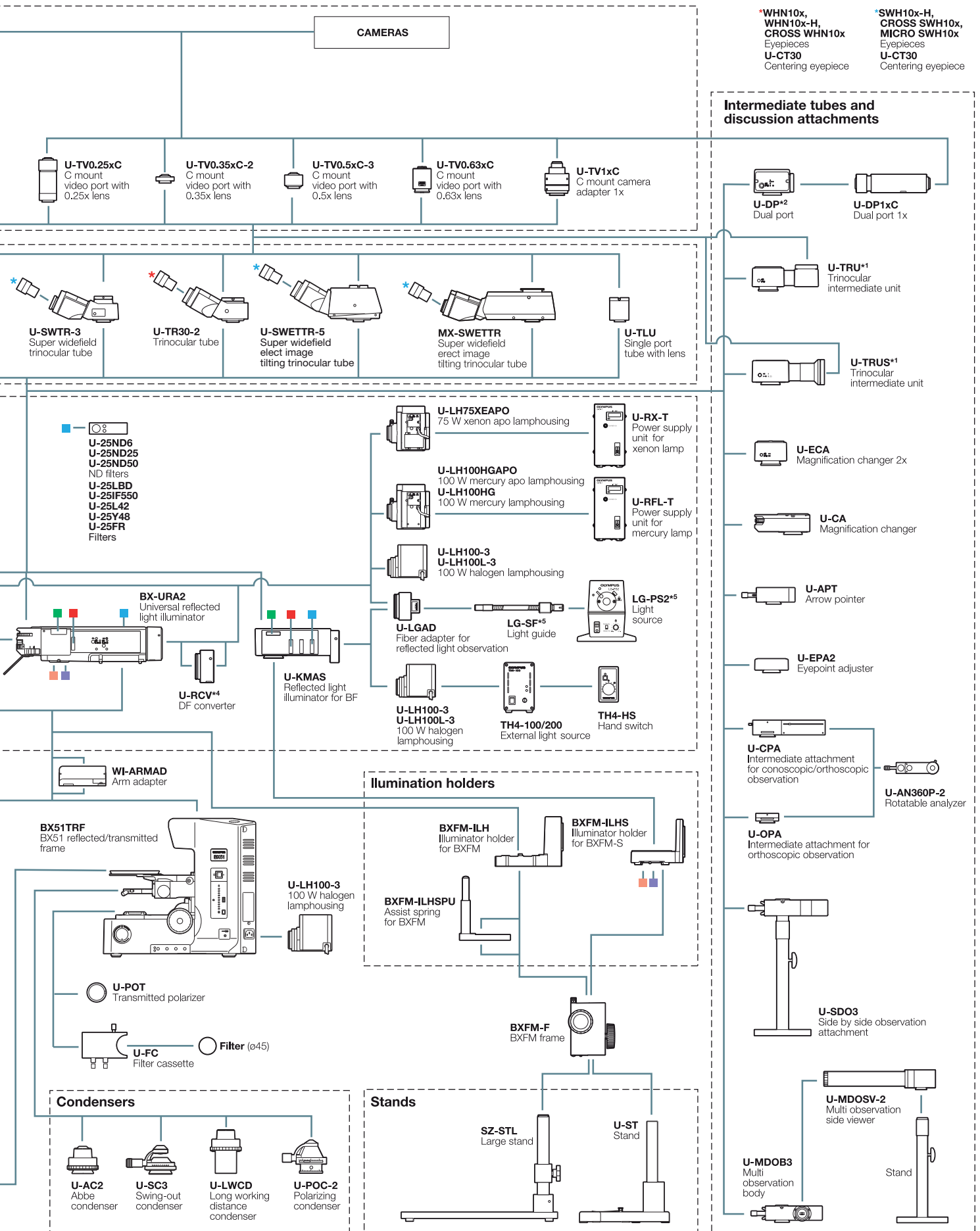
Microsoft Windows 8.1 (32bit/64bit) is the new standard in operating systems. OLYMPUS Stream fully utilizes all of the advanced capabilities for everyday tasks.

* Microsoft Windows 7, 8 are also supported.

BX51 / BX51M / BXFM System Diagram

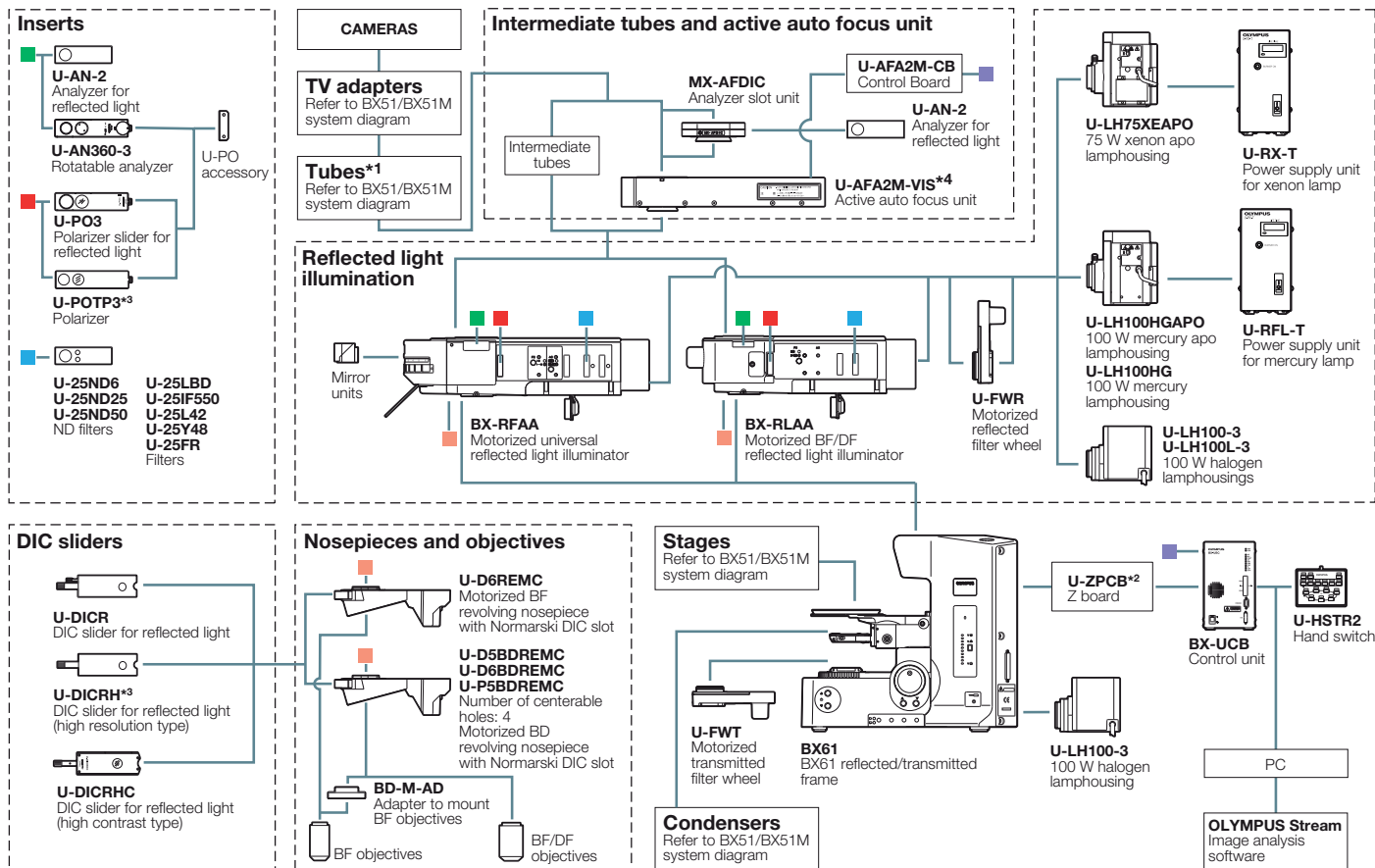


*1 Slight vignetting may occur in the periphery of the field of view in combination with an additional intermediate attachment or observation method. *2 Slight vignetting may occur in the periphery of the field of view in combination with an additional intermediate attachment or observation method. *3 Not available in EU countries and some areas. Different types may be offered in each area. *4 Connection with DP27 or DP22 microscope digital camera required.



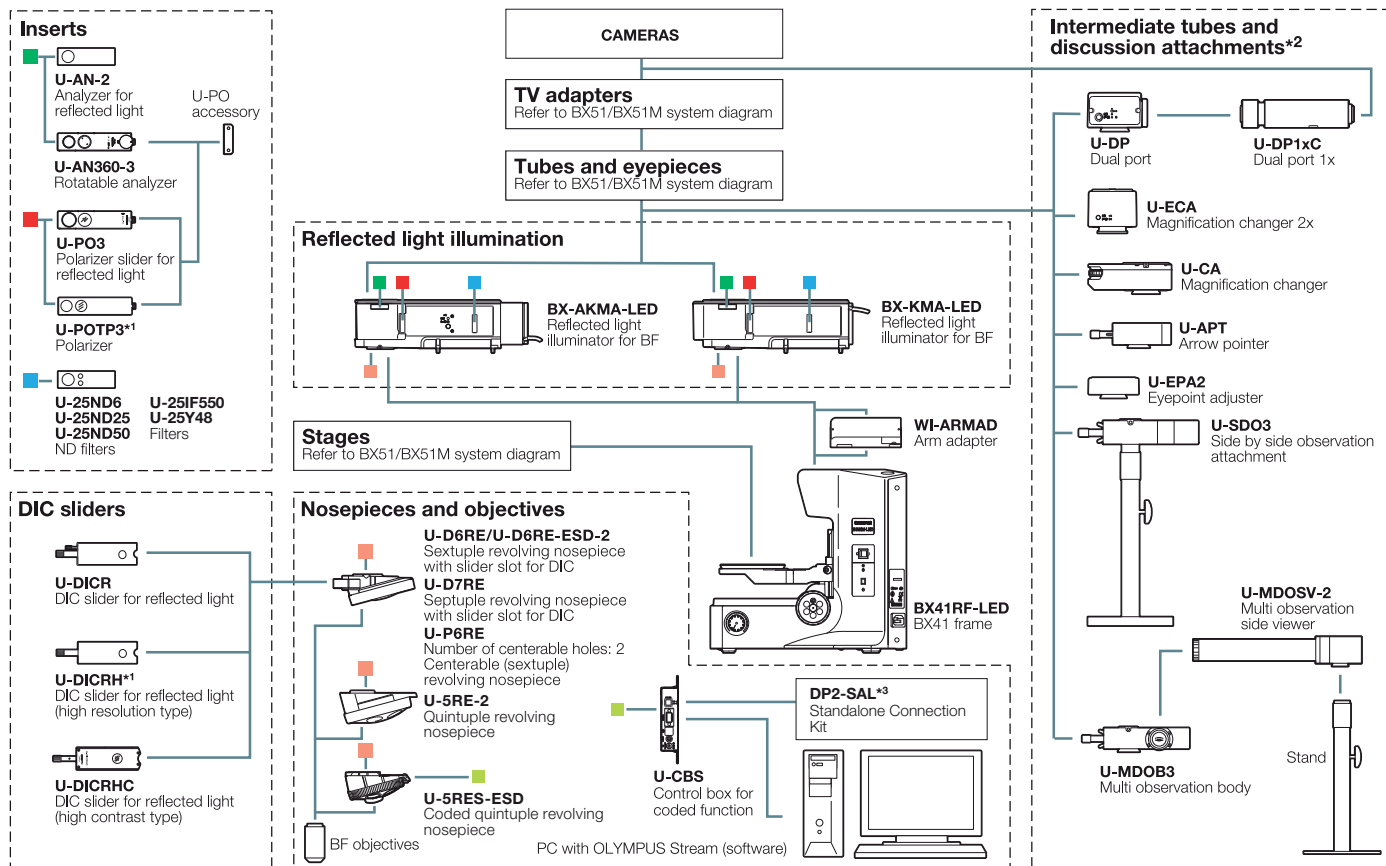
nation with fluorescence illuminator. *3 U-POTP3 polarizer should be used in combination with U-DICRH. ** Exclusively for high intensity burner.

BX61 System Diagram



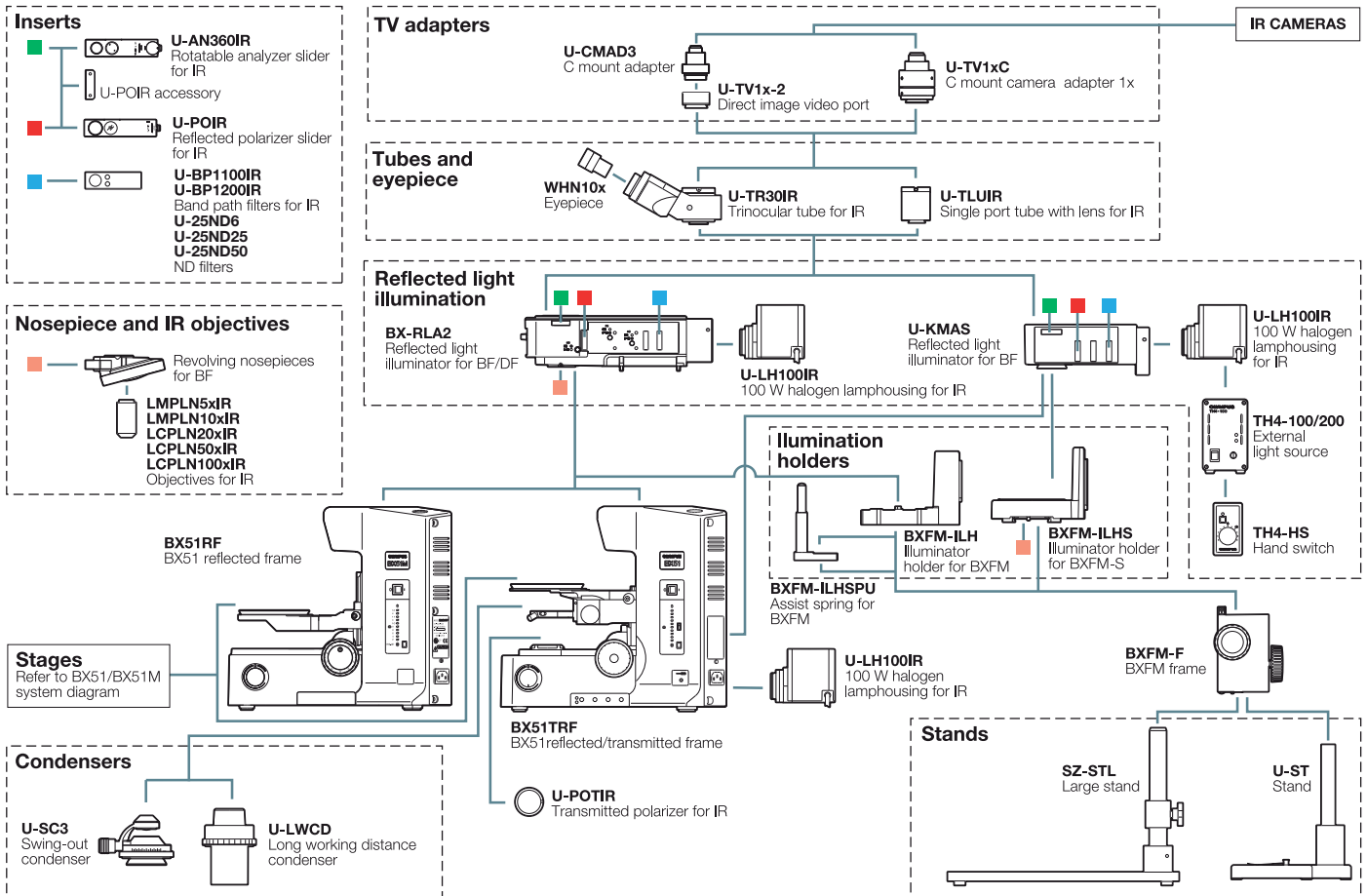
*1 F.N. of the observation tube is up to 22 with AF combination *2 U-ZPCB is not needed with AF combination *3 U-POTP3 polarizer should be used in combination with U-DICRH.
 *4 U-AFA2M-VIS is a Class 1 laser product.

BX41M-LED System Diagram



*1 U-POTP3 polarizer should be used in combination with U-DICRH. *2 Slight vignetting may occur in the field of view in combination with an additional intermediate attachment or observation method.
 *3 Connection with DP27 or DP22 microscope digital camera required.

BX51 IR System Diagram



BX61/BX51/BX51M/BX41M-LED Specifications

		BX61	BX51	BX51M	BX41M-LED
Optical system		UIS2 optical system (infinity-corrected)			
Microscope frame	Illumination	Reflected/transmitted		Reflected	Reflected (ESD capability)
		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	Built-in power supply for 3 W white LED Light preset switch
	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 tube	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
	Reflected fluorescence	BX-RLAA Motorized 6 position turret Built-in motorized shutter With FS, AS	BX-RLA2 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		<i>Following features are for BX-AKMA-LED only KPO/oblique illumination AS (with centering mechanism) Oblique illumination position settings</i>
Transmitted light		100 W halogen Abbe/long working distance condensers Built-in transmitted light filters (LBD, ND25, ND6)		—	
Revolving nosepiece	For BF	Motorized sextuple	Sextuple, centering sextuple, septuple, coded quintuple (optional motorized revolving nosepieces)		Quintuple, septuple (ESD capable), septuple, coded quintuple (ESD capable)
	For BF/DF	Motorized quintuple, motorized sextuple, centering quintuple	Sextuple, quintuple, centering quintuple, coded quintuple (optional motorized revolving nosepieces)		—
Stage		Coaxial left (right) handle stage: 76 (X) x 52 (Y) mm, with torque adjustment Large-size coaxial left (right) handle stage: 100 (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: 30 mm Fine stroke per rotation: 200 µm Minimum graduation: 2 µm With torque adjustment for coarse handle	
Observation tube	Widefield (F.N. 22)	For inverted image: binocular, trinocular, tilting binocular For erect image: trinocular, tilting binocular	
	Superwidefield (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	U-KMAS 100 W halogen fiber illumination BF/DIC/KPO
	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)	

UIS2 Objective Specifications

Objectives	Magnifications	NA	W.D. (mm)	Cover Glass Thickness* ³ (mm)	Silicon Thickness (mm)	Resolution* ⁴ (mm)
MPLAPON	50x	0.95	0.35	0	—	0.35
	100x	0.95	0.35	0	—	0.35
MPLAPON	100xOil* ¹	1.4	0.1	0	—	0.24
MPLFLN	1.25x* ^{5,6}	0.04	3.5	—	—	8.39
	2.5x* ⁶	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* ²	0.75	0.63	0	—	0.45
	50x	0.80	1.0	0	—	0.42
MPLFLN-BD* ⁷	100x	0.90	1.0	0	—	0.37
	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* ⁷	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
SLMPLN	100x	0.90	1.0	0	—	0.37
	20x	0.25	25	—	—	1.34
	50x	0.35	18	0	—	0.96
LMPLFLN	100x	0.6	7.6	0	—	0.56
	5x	0.13	22.5	—	—	2.58
	10x	0.25	21.0	—	—	1.34
LMPLFLN	20x	0.40	12.0	0	—	0.84
	50x	0.50	10.6	0	—	0.67
	100x	0.80	3.4	0	—	0.42
	5x	0.13	15.0	—	—	2.58
LMPLFLN-BD* ⁷	10x	0.25	10.0	—	—	1.34
	20x	0.40	12.0	0	—	0.84
	50x	0.50	10.6	0	—	0.67
MPLN* ⁵	100x	0.80	3.3	0	—	0.42
	5x	0.10	20.0	—	—	3.36
	10x	0.25	10.6	—	—	1.34
MPLN-BD* ^{5,7,8}	20x	0.40	1.3	0	—	0.84
	50x	0.75	0.38	0	—	0.45
	100x	0.90	0.21	0	—	0.37
	5x	0.10	12.0	—	—	3.36
LCPLFLN-LCD	10x	0.25	6.5	—	—	1.34
	20x	0.40	1.3	0	—	0.84
	50x	0.75	0.38	0	—	0.45
LMPLN-IR* ⁵	100x	0.90	0.21	0	—	0.37
	5x	0.1	23	—	—	6.71* ⁹
	10x	0.3	18	—	—	2.24* ⁹
LCPLN-IR* ⁵	20x	0.45	8.3	0-1.2	0-1.2	1.49* ⁹
	50x	0.70	4.5	0-1.2	0-1.2	1.03* ⁹
	100x	0.85	1.2	0-0.7	0-1.0	0.79* ⁹

*1 Specified oil : IMMOIL-F30CC

*2 The MPLFLN40x objective is not compatible with the differential interference contrast microscopy.

*3 — : Applicable to the view of specimens with/without a cover glass

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

*4 Resolutions calculated with aperture iris diaphragm wide open.

*5 Limited up to F.N. 22, No compliance with F.N. 26.5

*6 Analyzer and polarizer are recommended to the usage with MPLFLN1.25x and 2.5x.

*7 BD: Brightfield / darkfield objectives

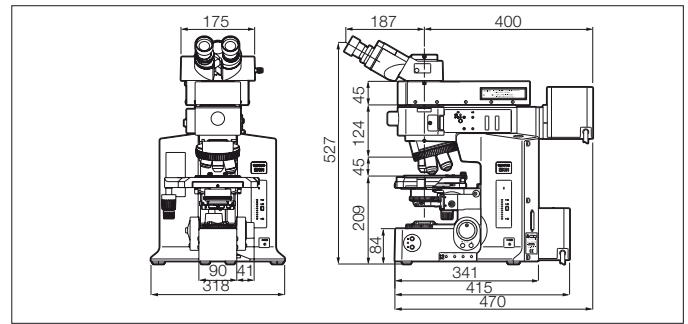
*8 Slight vignetting may occur in the periphery of the field when MPLN-BD series objectives are used with high-intensity light source such as mercury and xenon for darkfield observation.

*9 With the use of 1100nm laser

Dimensions

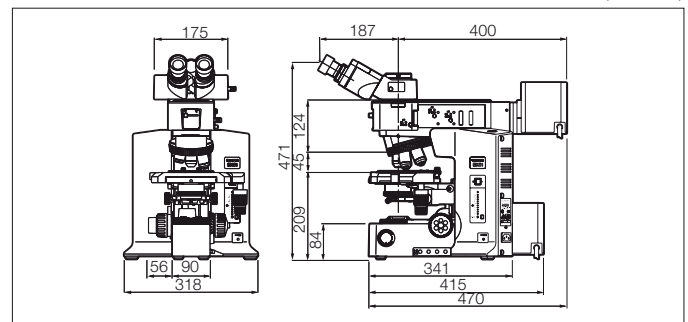
BX61 (AF combination) dimensions

(unit: mm)



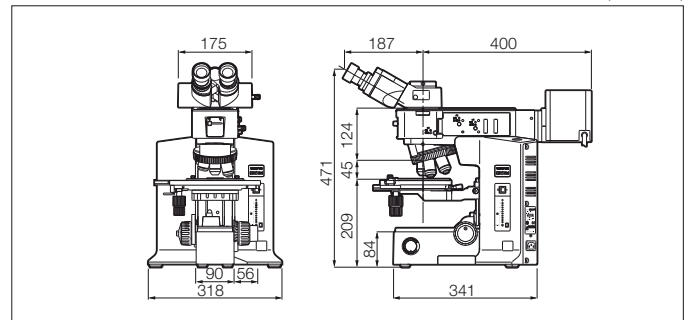
BX51 dimensions

(unit: mm)



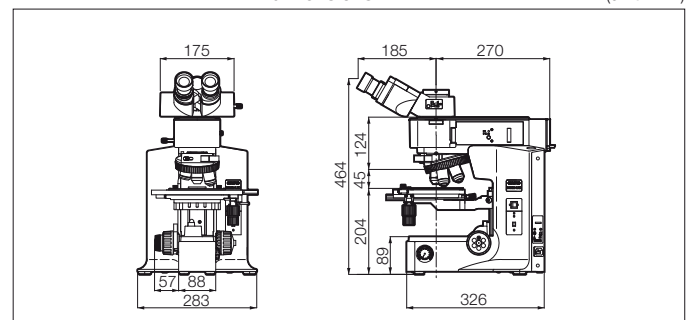
BX51M dimensions

(unit: mm)



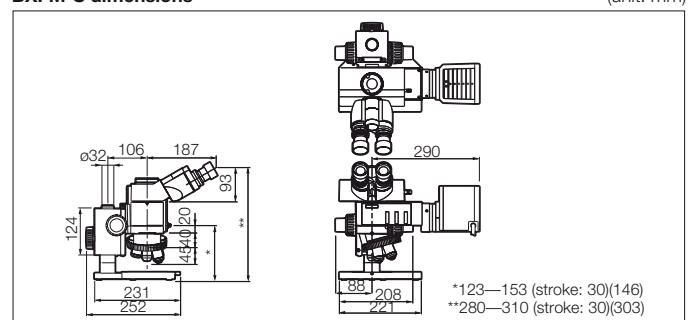
BX41M-LED+BX-AKMA-LED dimensions

(unit: mm)



BXFM-S dimensions

(unit: mm)



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