

OLYMPUS®

Your Vision, Our Future

Upright Metallurgical Microscope

BXiS

BXiS Metallurgical Microscope System: Seamless Integration of Digital Imaging



BXiS a System to Fit Your 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 you require basic measuring using white light imaging or are performing highly demanding material identification using polarized light that requires advanced color fidelity, Olympus has a flexible solution to fit your needs.

BXiS is 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 your individual System.

Olympus gives you the flexibility to create a solution that fits your environment workflow and needs. You can concentrate on your business while Olympus delivers the convenient, time-saving tools to make even routine activities a snap.

BXiS is your individual Solution.

With the BXiS, the iS represents your individual Style.



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Versatile System Fitting Your Individual Style

Olympus Is Dedicated to Making Microscope System Solutions to Support Your Work on All Levels

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System Diagrams, Specifications

BX51 / BX51M / BXFM System Diagram

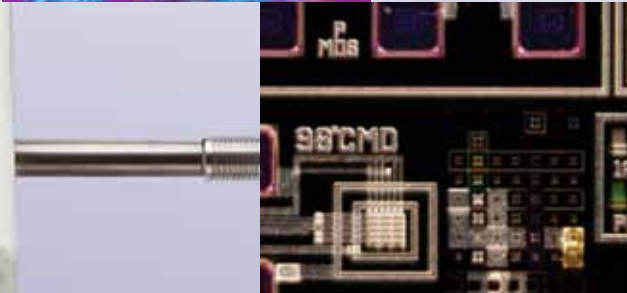
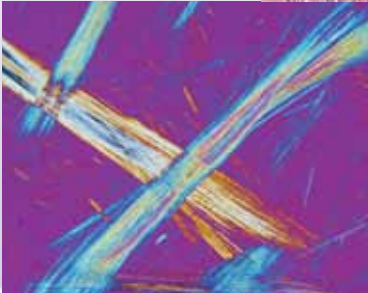
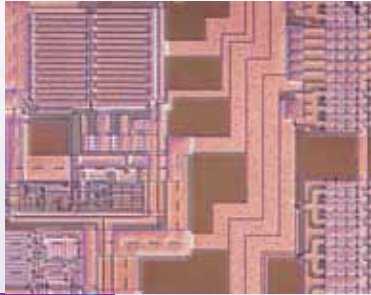
BX61 System Diagram

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BX51 IR System Diagram

Specifications

Dimensions



Versatile System Fitting Your Individual Style

Olympus Is Dedicated to Making Microscope System Solutions to Support Your Work on All Levels

Keep Your Workflow Streamlined

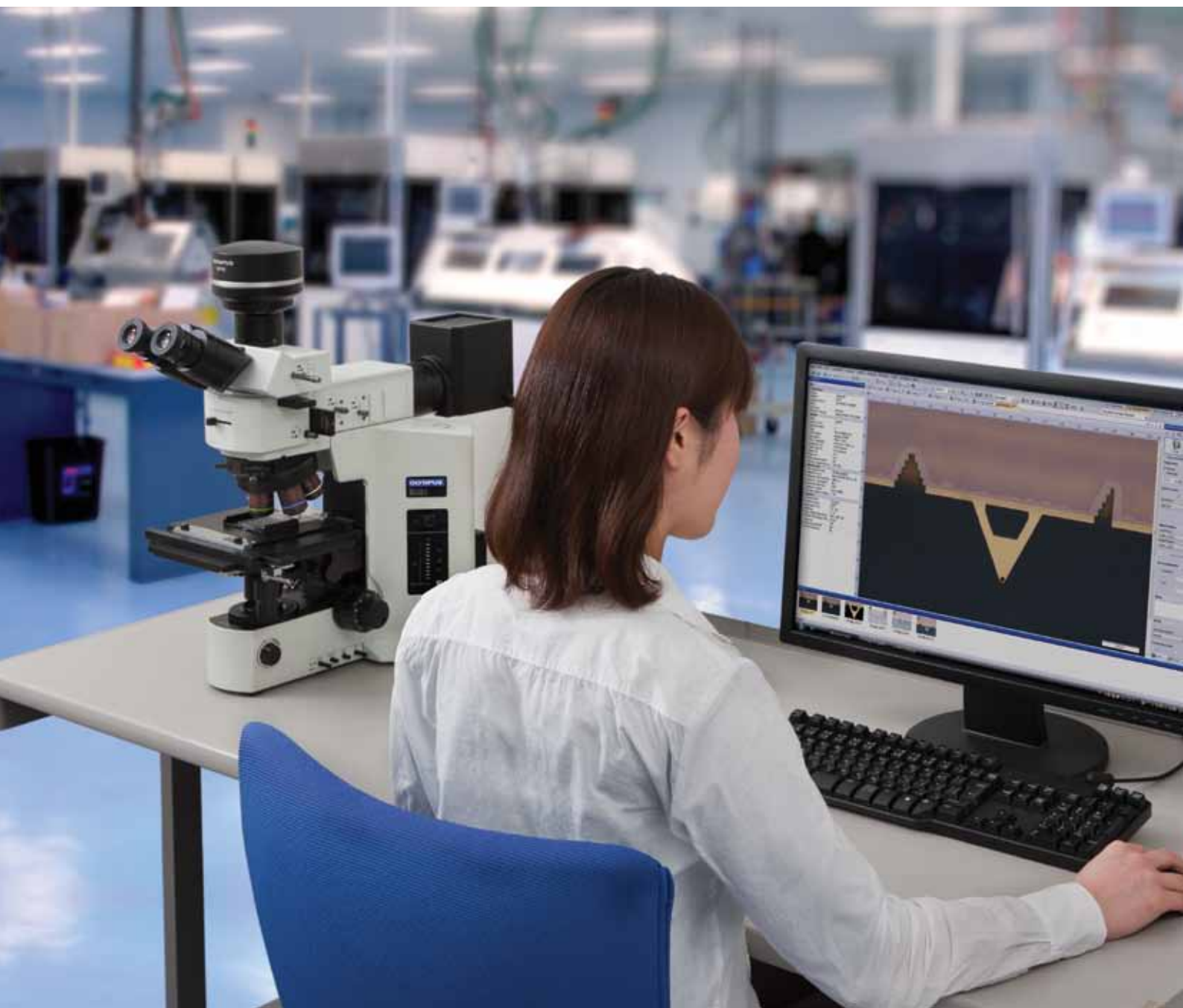
Your time is just as important as your working conditions. That's why the BXiS system's imaging and control software can be personalized to fit your process flow. An easy-to-use interface guides you effortlessly through every step from image adjustment image capture, measurements, report creations and data basing or whatever you need to achieve. As a result, you'll find that you can complete your tasks more efficiently regardless of their complexity.

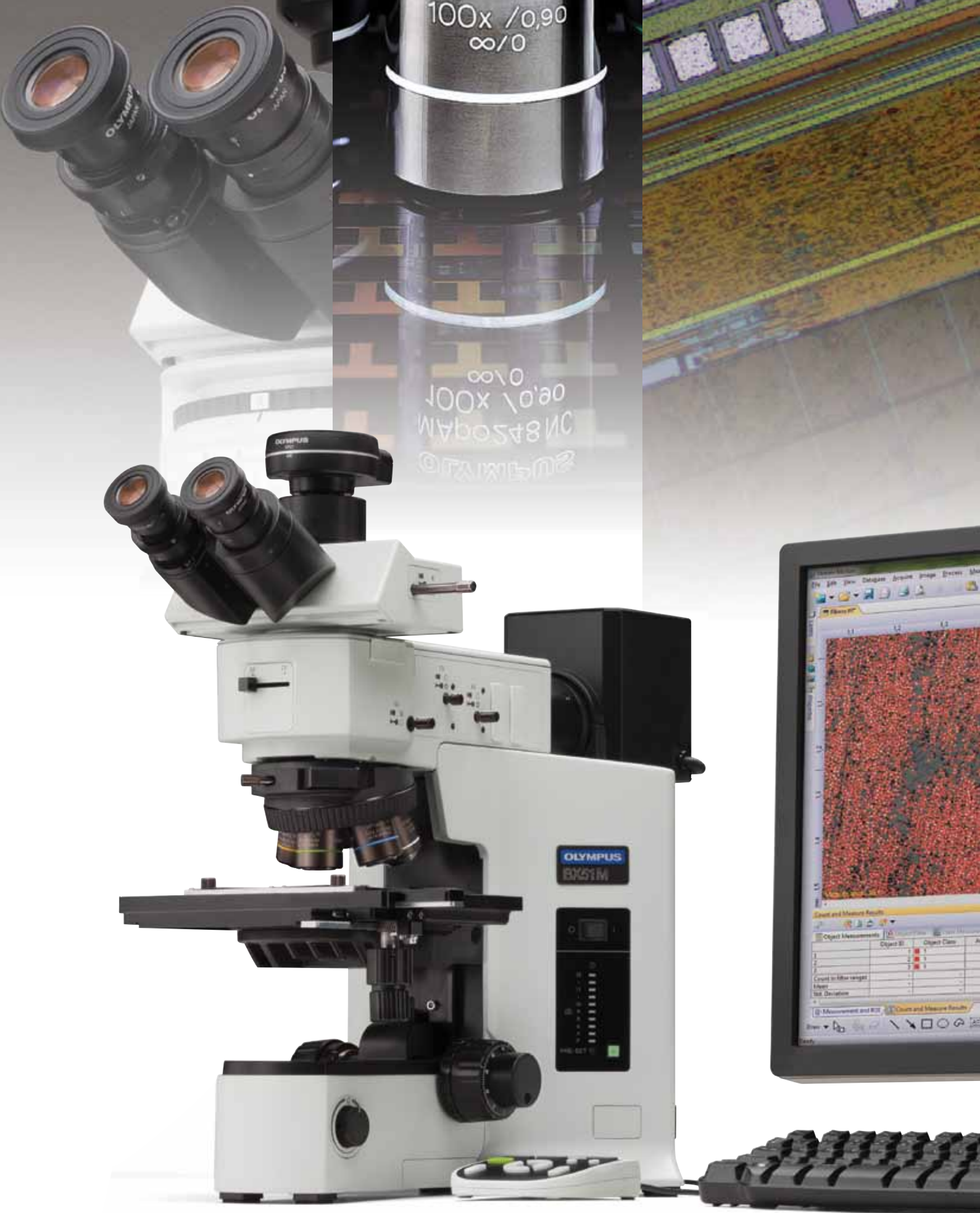
Build Your Olympus System Your Way

The fully adaptable BXiS concept shows how we're able to offer manual or automated systems that fit your needs and budget. Create and tailor your system however you wish!

Easily Expandable To Future Applications

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





BX51RF/BX-RLA2/DP21

Keep Your Workflow Streamlined

OLYMPUS Stream Software Adapts to Your Every Requirement

User Interface Function

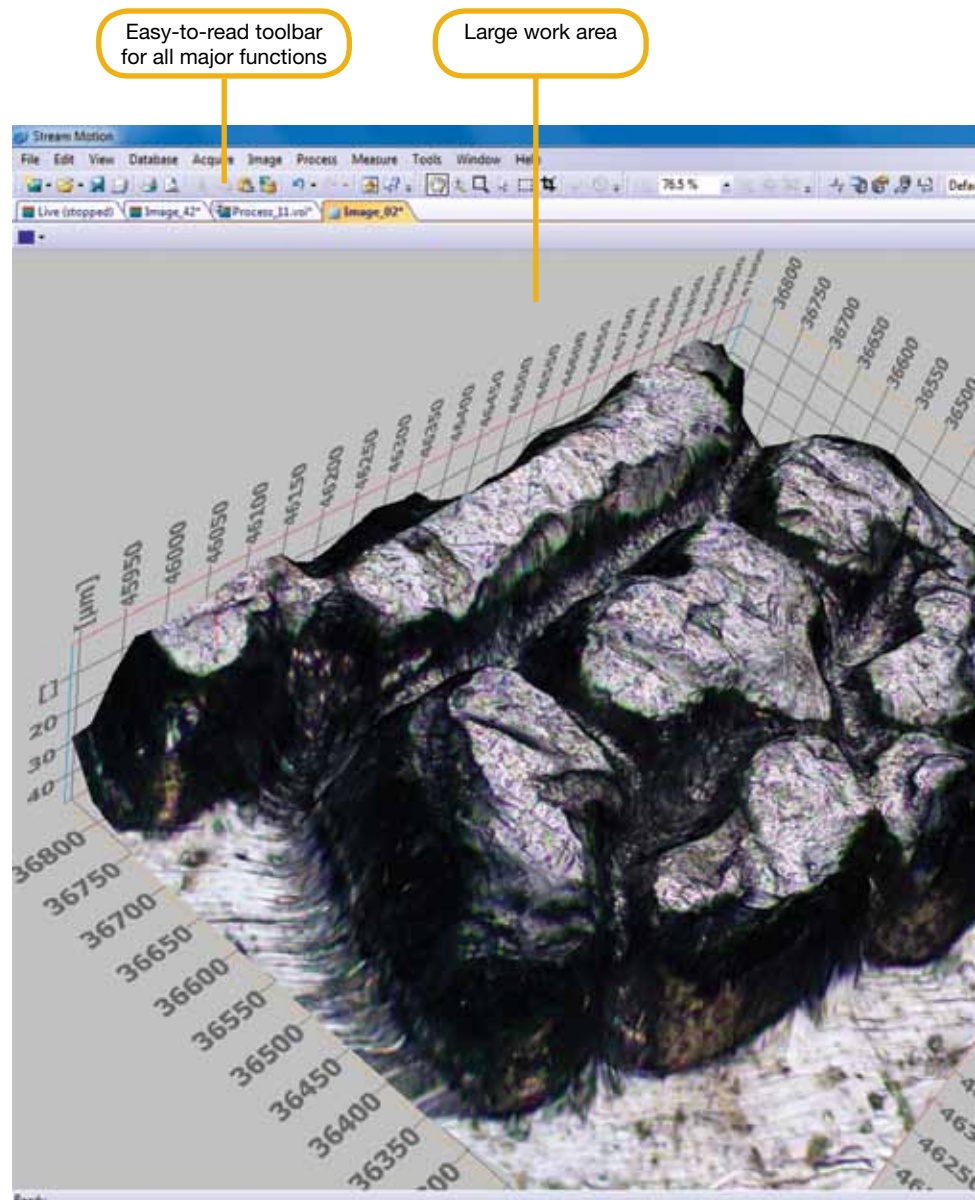
As you progress from image capture to report creation, the tool windows you need are always displayed at every stage. You can quickly and easily access control parameters.

Dynamic User Interface

Depending on your needs, you can arrange the layout of the tool window to best fit your workflow. You can create customized layouts with all the necessary functions for each activity.

My Function

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



OLYMPUS Stream Motion user interface example

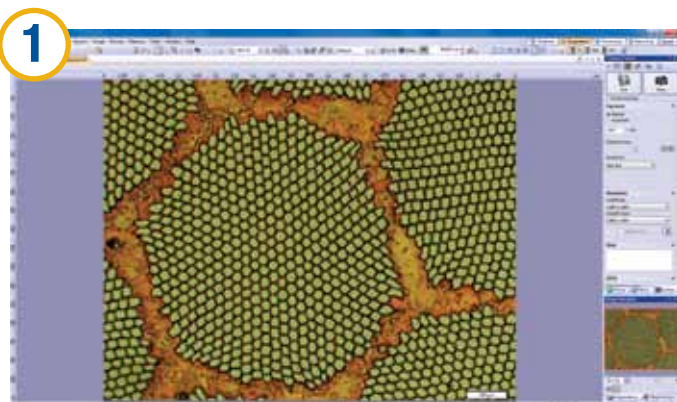
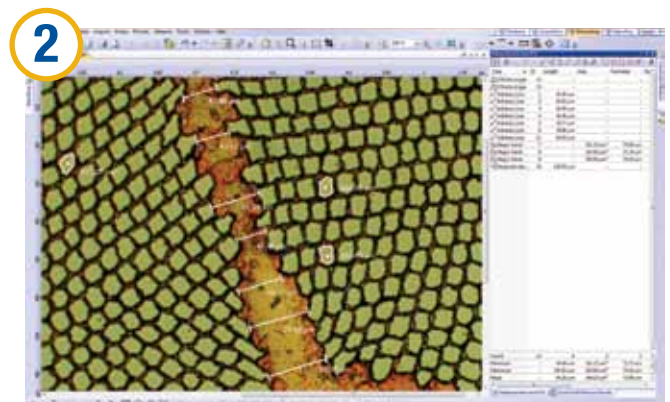


Image Acquisition

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

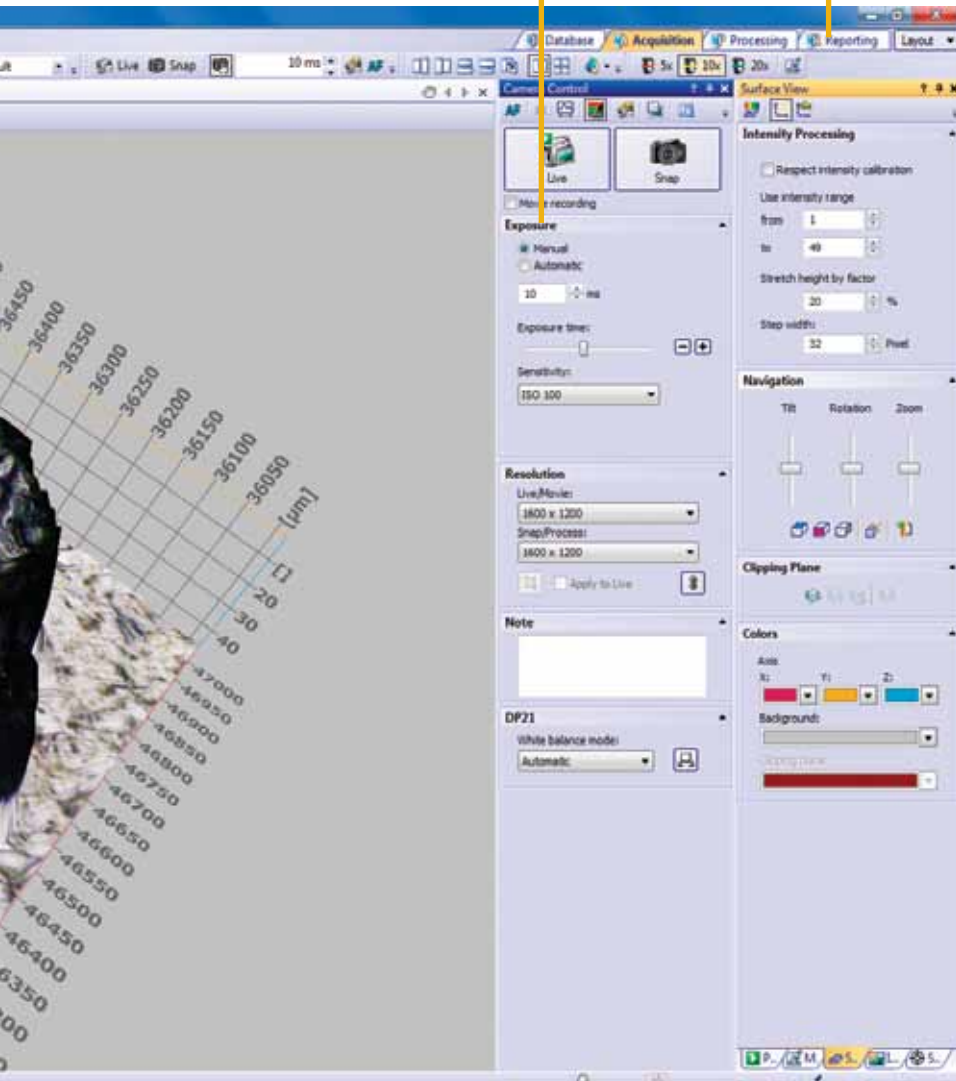


Measurements

Capture your 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

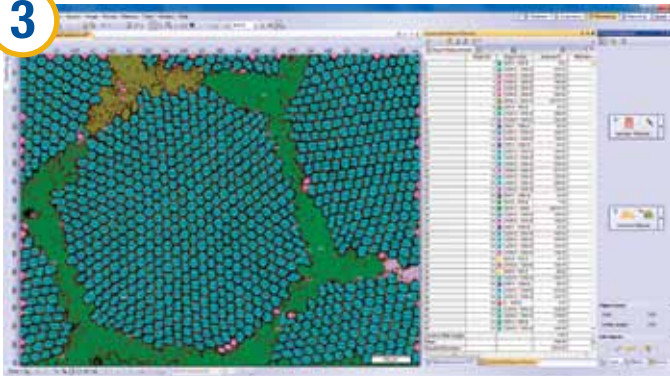
Tab workflow for quick access between tasks



Microsoft Office Integration

OLYMPUS Stream can create professional reports directly into Microsoft Word. Report templates and headers can be flexibly modified according to your company's needs. The images can be zoomed and annotated along with the metadata. Statistical analysis and graphing are also accomplished using Excel with the output easily imported into your report. OLYMPUS Stream uses a unique compression method that allows you to store view reports without the need for any unique applications software.

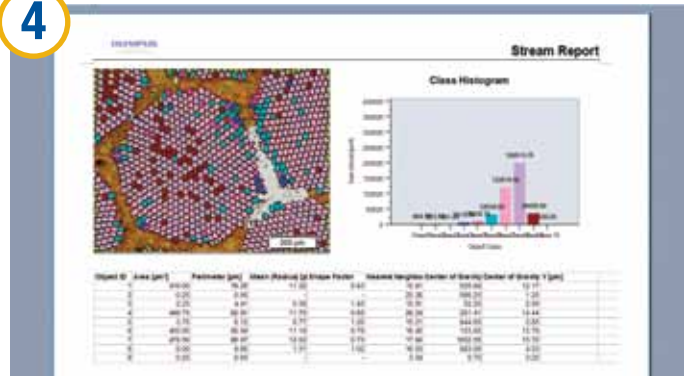
3



Object Detection

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

4

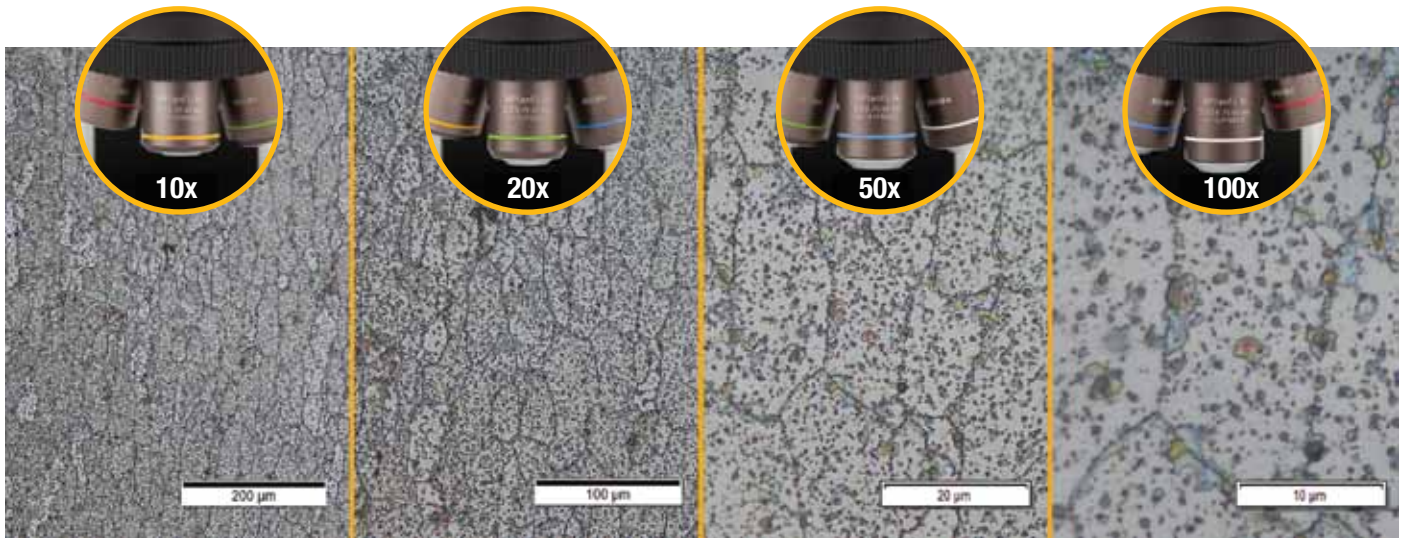


Report Generation

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

Keep Your Workflow Streamlined

BXiS Simplifies Your 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 lens settings are automatically reflected in the scale and measurement results displayed on the monitor and output to your reports.

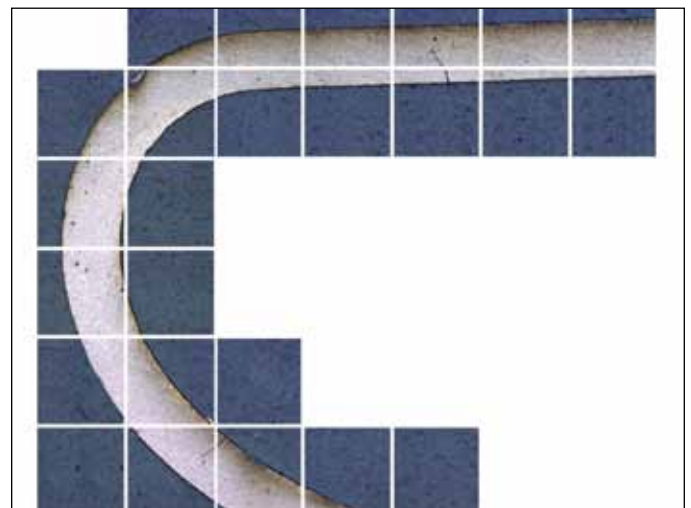
Quality Control and Traceability

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 you use the smooth focus adjustment to combine many images in the z axis, providing you with 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 you to combine the images. The OLYMPUS Stream software then rapidly stitches them together, providing you 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 the best 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 suit your needs for comfort and easy, precise operation.



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



Build Your Olympus System Your Way

BXiS Offers the Perfect System for Your Sample and Solution

Stage and Arm Adapters

The fully integrated vertical illuminator accommodates large specimen heights. In addition, a variety of stage and upper arm adaptors 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, are available to provide you with the full flexibility of the BXiS.

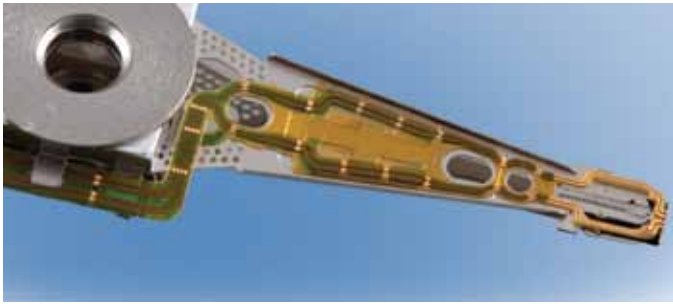
Laser-autofocus U-AFA2M

For the ultimate in fast, reproducible focusing, the BX61 can be fitted with the U-AFA2M autofocus unit. Utilizing an active multipot 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/DP72

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 you to maintain the color characteristics of the illumination regardless of the intensity. LEDs provide you with 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 you to create off-axis (oblique) illumination to accentuate minute topographical features of your sample. The unique aperture design is fully adjustable by the user to provide flexibility to adjust for all samples.



BX41RF-LED/BX-AKMA-LED/DP21



Olympus Eco-Products

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

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

Build Your Olympus System Your Way

BXiS Provides a Range of Objective Lenses

Olympus offers a wide variety of objective lenses to suit every observation technique. You can select the right lens for your application from our family of over 150 objective lenses.

UIS2 Objective Lens Series

Color fidelity is important for accurate, efficient inspection. The UIS2 objective lens 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 lens 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 objective lenses 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 Lens Series

The MPLAPON objective series are high-performance lenses offering chromatic aberration control for the ultimate 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 lens. 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 objective lenses 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 objective lenses, and 0-0.7 mm thicknesses are adjustable for the 100x objective lens.

IR Imaging Lens Series - LCPLN-IR

Olympus IR objective lenses can be used for conventional microscopy and for semiconductor inspection, measurement, and processing systems in which you need to look inside the sample that is opaque to white light. 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.

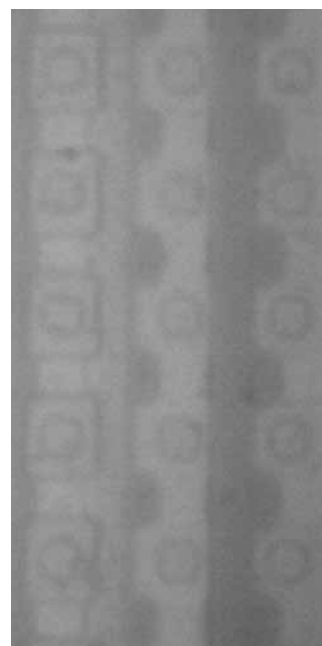


Without compensation

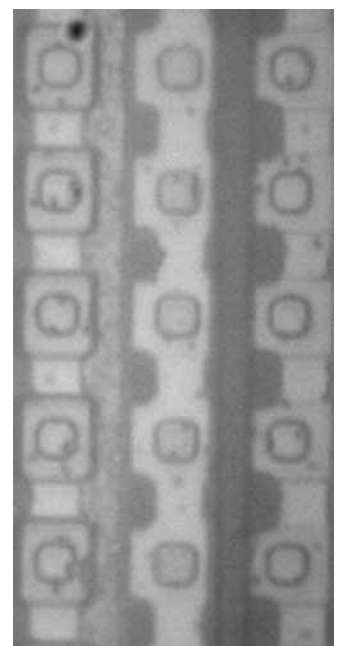


Compensation

LCD Circuit Pattern Taken with LCPLFLN-LCD



Without compensation



Compensation

Semiconductor Circuit Under Silicon Layer Taken with LCPLN-IR

Build Your Olympus System Your Way

Olympus Broad Range of Digital Cameras

DP72

With this color digital camera, resolution, sensitivity, frame rate, and color fidelity combine to provide the highest level of performance. The DP72 is compatible with all samples and observation modes, including fluorescence, and produces clear 12.8M-pixel sample images.

DP25

This high-resolution 5M pixel color CCD camera provides the highest performance in brightfield observation for most applications. The DP25 accommodates all techniques with high color fidelity.

DP21

This 2M-pixel color CCD camera can be controlled from a space-saving, intuitively operated hand switch that 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	For standard applications	Cost performance	Space saving	For IR observation
		DP72	XC10	SC100	XC50	DP25	UC50	UC30	SC30	DP21	XM10IR
Image sensor		2/3 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	1/1.8 in. Color CCD	1/2 in. Color CMOS	1/1.8 in. Color CCD	2/3 in. Mono CCD
Pixel density (megapixel)		12.8	1.4	10.0	5.0	5.0	5.0	3.2	3.3	2.0	1.4
Frame rate (fps)		57~15	50~15	45~3.2	24.5~5	32~8	24.5~4.5	35~7	49~10	27~15	80~15
ADC*		12 bit	14 bit	12 bit	14 bit	12 bit	14 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)	■	■		■	■	■	■		■	■
Projection magnifications	Video camera adapter	Projection area (F.N.)									
		DP72	XC10	SC100	XC50	DP25	UC50	UC30	SC30	DP21	XM10IR
1X	U-TV1XC	11.0	11.0	7.0	11.0	11.0	11.0	8.9	8.0	8.9	11.0
0.63X	U-TV0.63XC	17.5	17.5	11.0	17.5	17.5	17.5	14.1	12.7	14.1	-
0.5X	U-TV0.5XC	22.0**	22.0**	13.9	22.0**	22.0**	22.0**	17.8	16.0	17.8	-
0.35X	U-TV0.35XC	-	-	19.9	-	-	-	-	22.0**	-	-

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

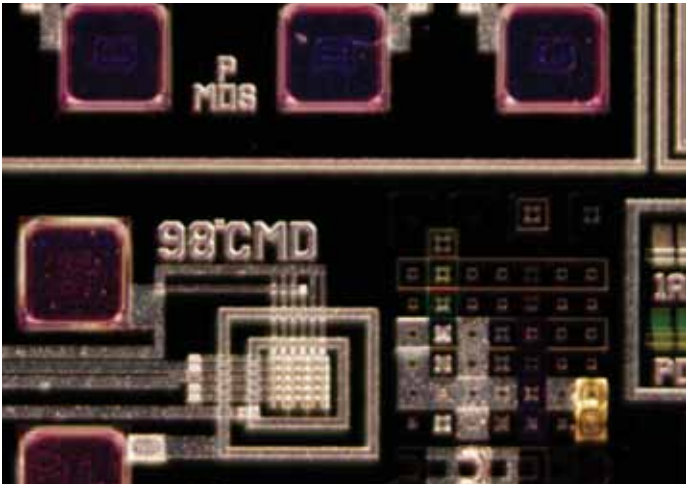
**Insufficient peripheral light intensity or vignetting may be distinct depending on optical system.

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

Generally, required sensitivity becomes higher in the order of BF (Brightfield) -> DIC -> POL (Polarized light) -> DF (Darkfield) -> FL (Fluorescence). However, it actually depends on how much light will come back from the sample.

Build Your Olympus System Your Way

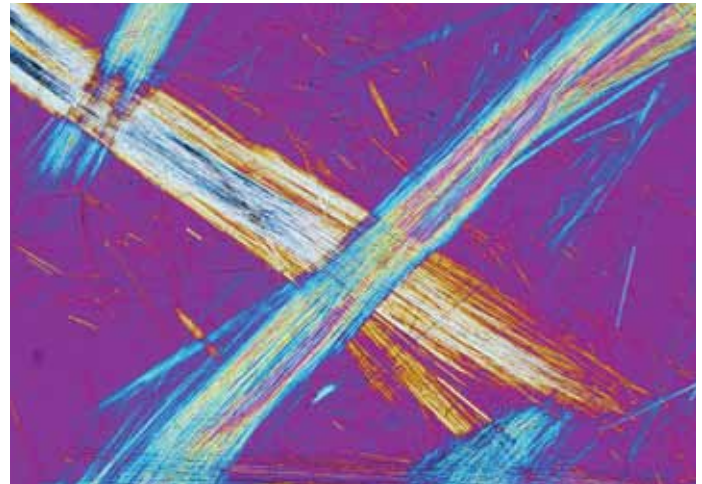
BXiS Gets You the Image You Want



Surface mounting board

Darkfield

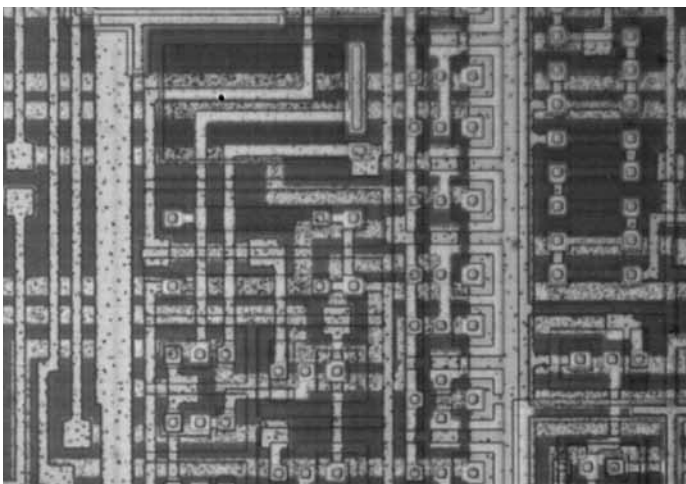
Darkfield lets you observe scattered or diffracted light from the specimen. The light from the lamp travels through ring-form illumination optics in the illuminator and is focused on the specimen. The light from the specimen is reflected only by imperfections in the z axis. The user can identify the 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

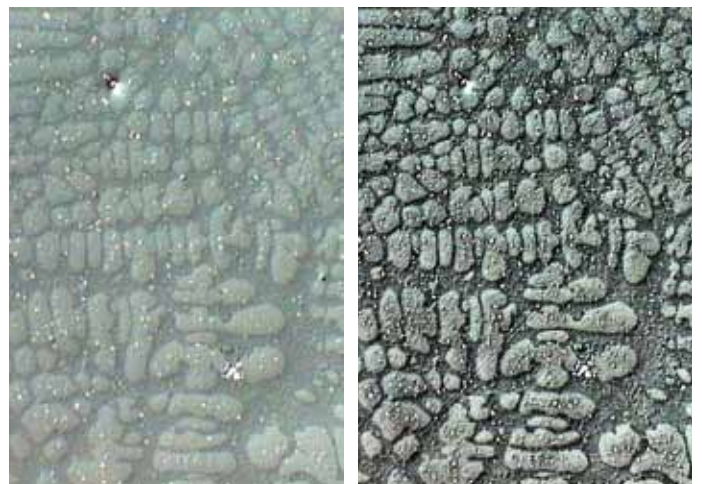
This microscopic observation technique utilizes polarized light generated by a set of filters (analyzer and polarizer). The characteristics of the sample directly affect the intensity of the light reflected through the system. It is suitable for metallurgical structures (i.e., growth pattern of graphite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



Semiconductor circuit under silicon layer

Infra-Red (IR)

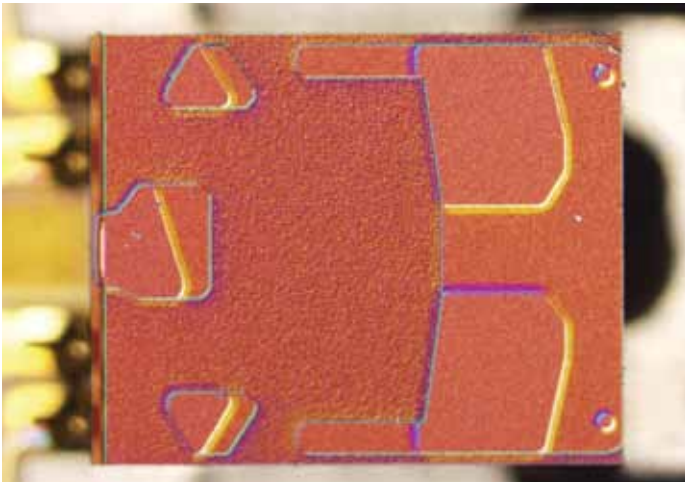
IR observation is the preferred method of nondestructively inspecting the inside of electronic devices constructed with silicon or glass that easily transmit IR wavelengths of light. IR objectives are also used with near-infrared techniques such as Raman spectroscopy and YGA laser repair applications.



Dendrite

Processing Filter

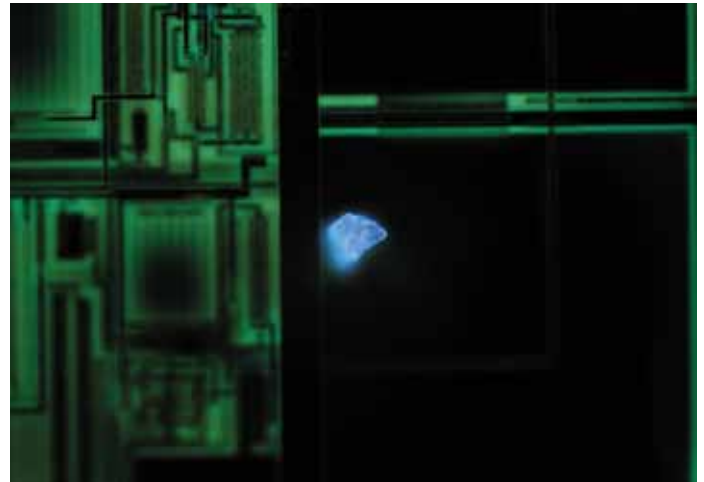
OLYMPUS Stream has a variety of filters for edge detection, smoothing, and other purposes. You can visualize image features by enhancing and modifying with a processing filter on the acquired image. For best results, you can check or adjust the filter results in a preview display.



Magnetic head

Differential Interference Contrast (DIC)

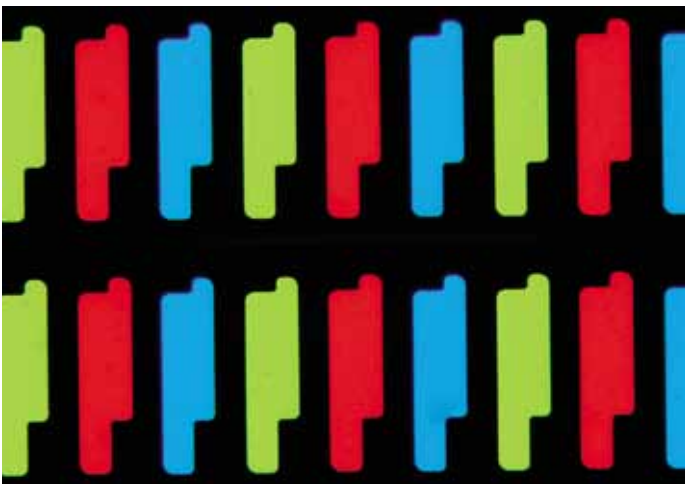
DIC is a microscopic observation technique in which the height difference of a specimen not detectable with brightfield becomes a relief-like or three-dimensional image with improved contrast. This technique, based on polarized light, can be fitted to your needs with a choice of three specially designed 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

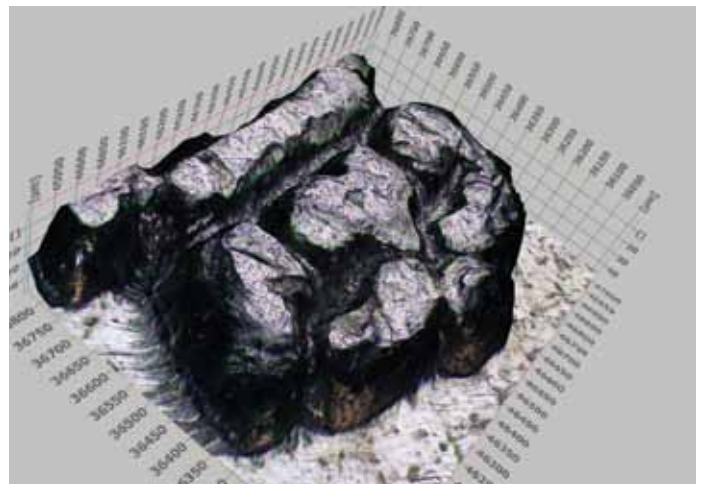
This technique is used for specimens that fluoresce (emit light of a different wavelength) when illuminated with a specially designed filter module that can be tailored to your application. It is suitable for inspection of contamination on semiconductor wafers, photo-resist residues, and detection of 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. You can examine your samples in brightfield, darkfield, DIC, and polarized imaging in transmitted light, all in one convenient system.



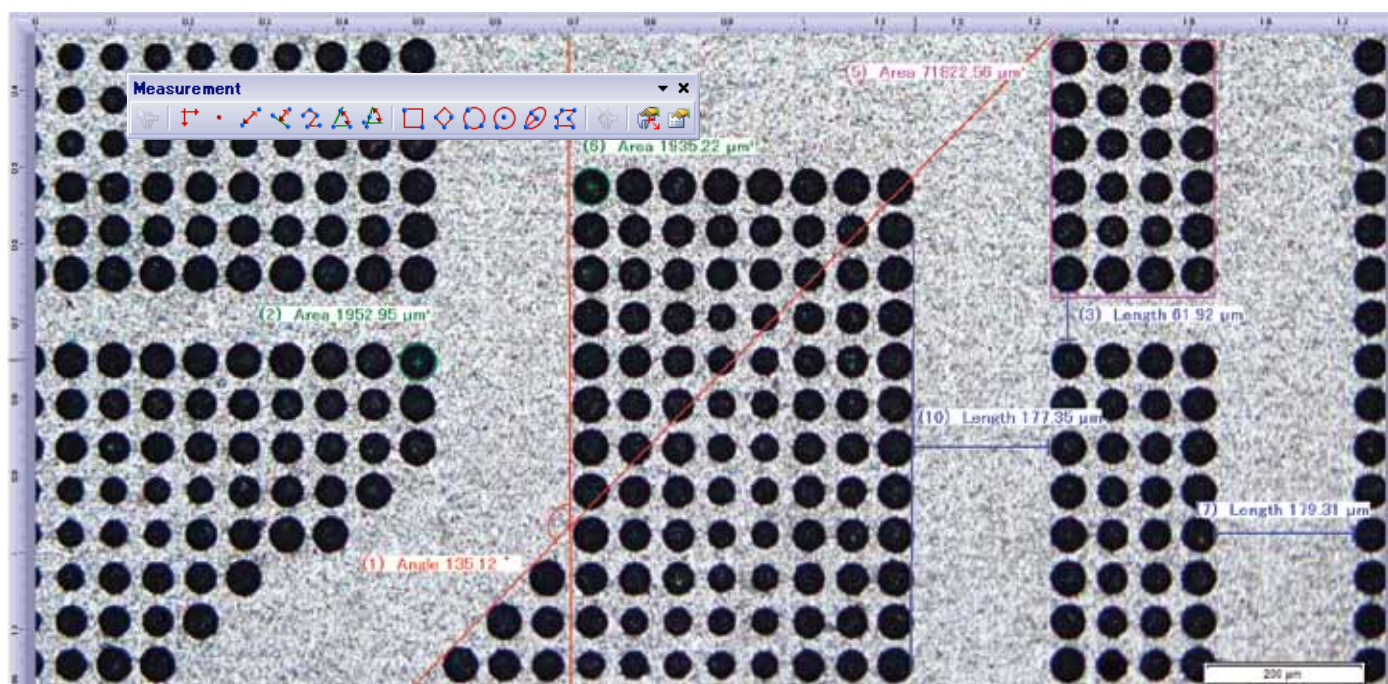
Coin detail

Automated 3D Image Creation (EFI)

Using the BX61 or external motorized focus units, you 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.

Build Your Olympus System Your Way

From Simple Measurements to Complex Image Analysis

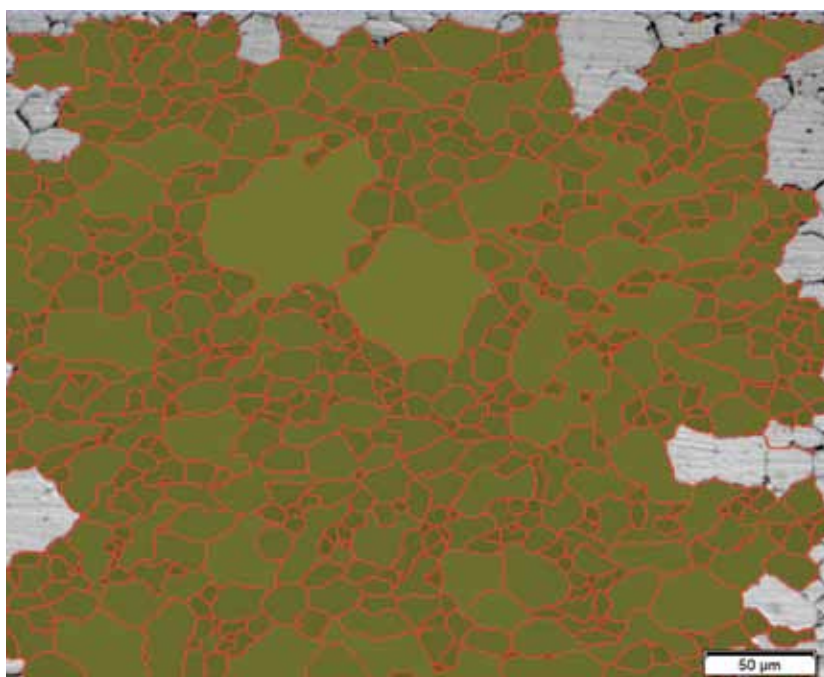


Measurement options

Measurement

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

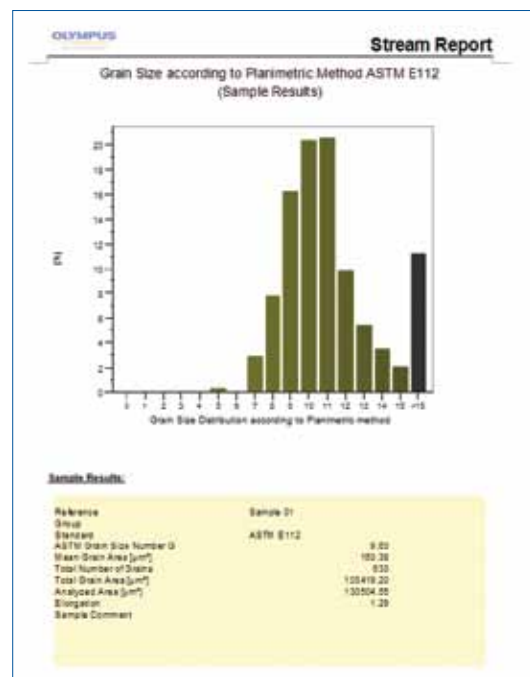
as distances, angles, rectangles, circles, ellipses, and polygons. All measured results are saved with the image files for further documentation.



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.

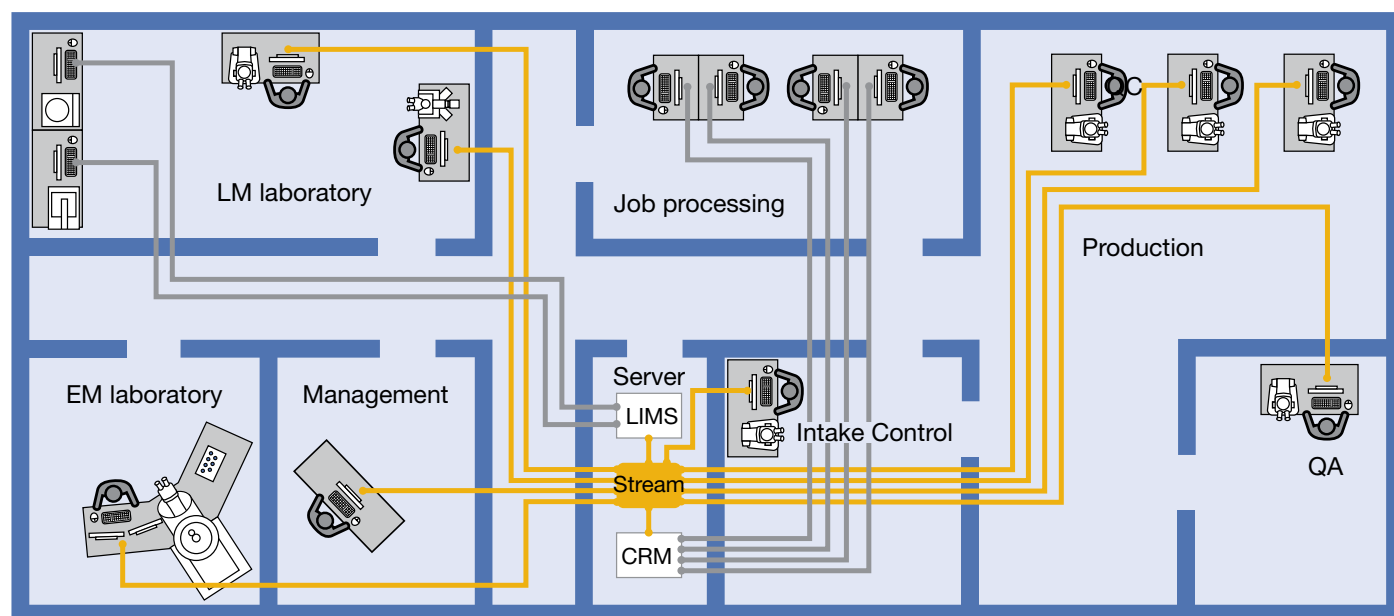


Count and Measure

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 Expandable to Future Applications

BXiS Expands to Meet Your Future Needs



Office network

Database Management

When you need to efficiently browse through thousands of images and other files created in the past, OLYMPUS Stream can streamline your workflow from image capture through data management.

The software incorporates a client-server database based on Microsoft SQL Server Express. It allows you to assign 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

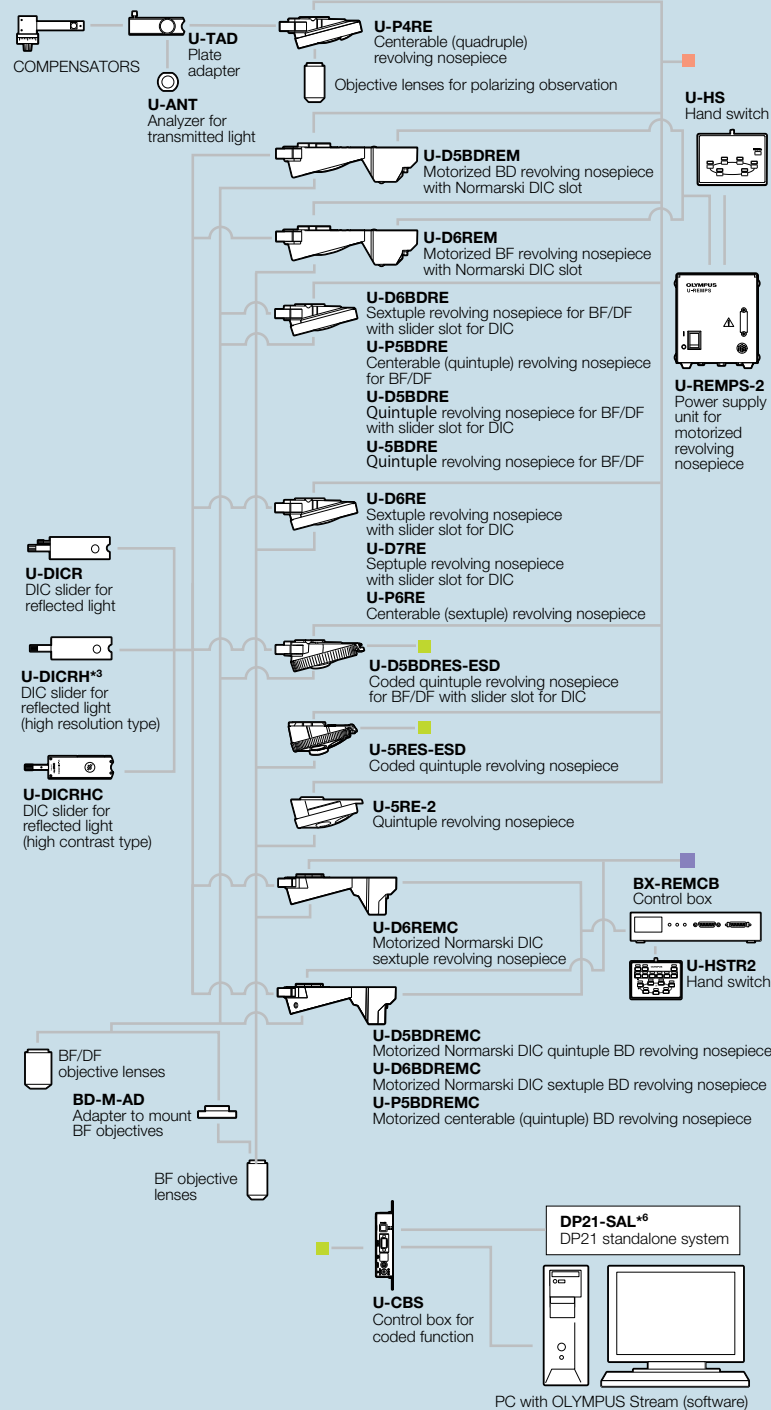
The OLYMPUS Stream NETCAM option lets any authorized network user connect to your OLYMPUS Stream PC and visualize the same image in real time with a web browser. What's more, the DP21 also provides self-contained integration into your local network, allowing you to share your work across your office or around the world.

Windows 7 64-bit

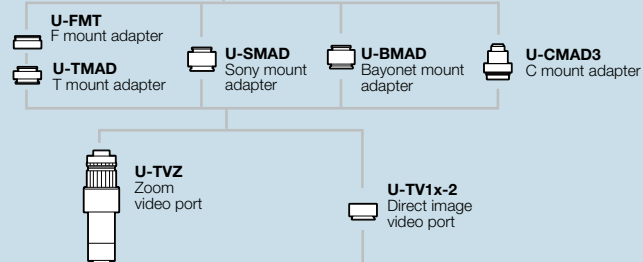
The 64-bit edition of Microsoft Windows 7 is the new reference in operating systems. OLYMPUS Stream fully utilizes all of the advanced capabilities of 64-bit computing for your everyday tasks. You can smoothly execute advanced image processing tasks (like counting more than 2 million objects simultaneously) that were impossible before.

BX51 / BX51M / BXFM System Diagram

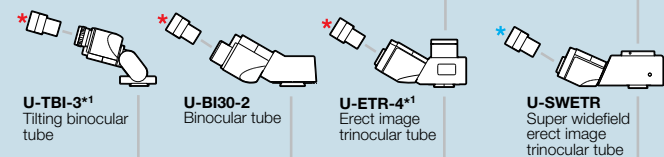
Nosepieces, inserts and objective lenses



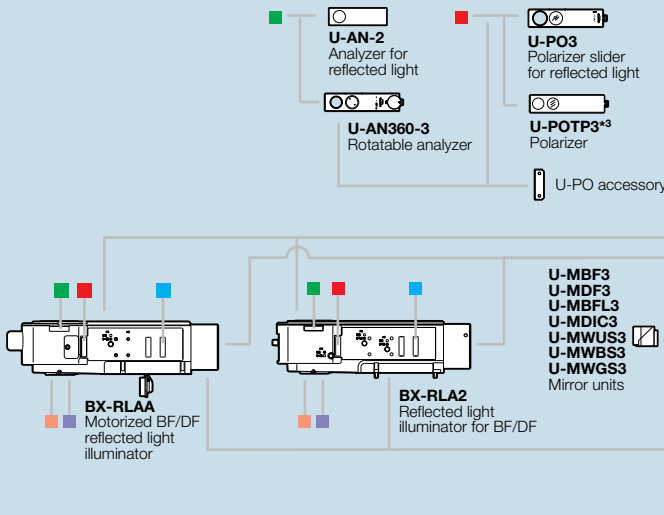
TV adapters



Tubes and eyepieces

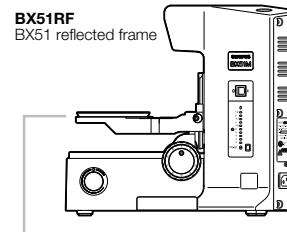


Illumination and inserts

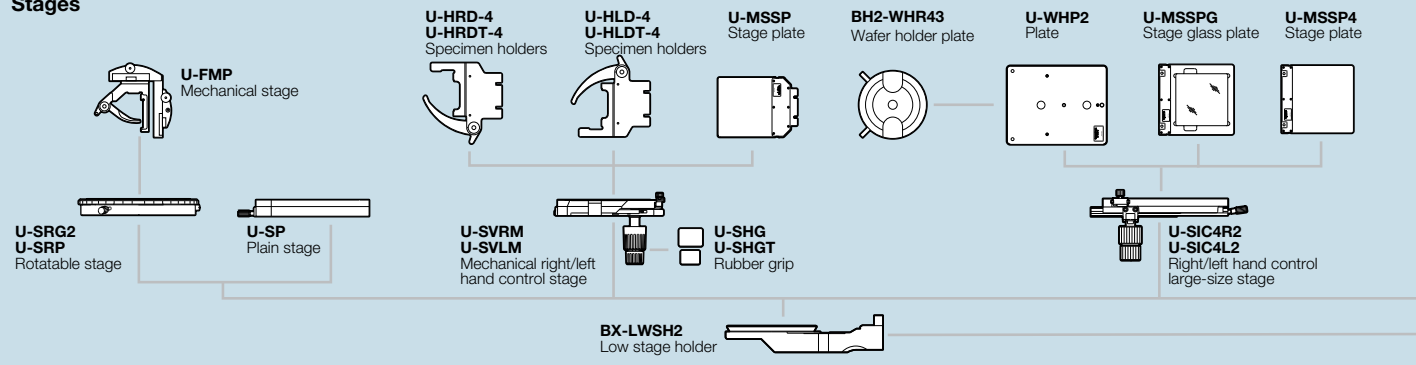


BX51RF

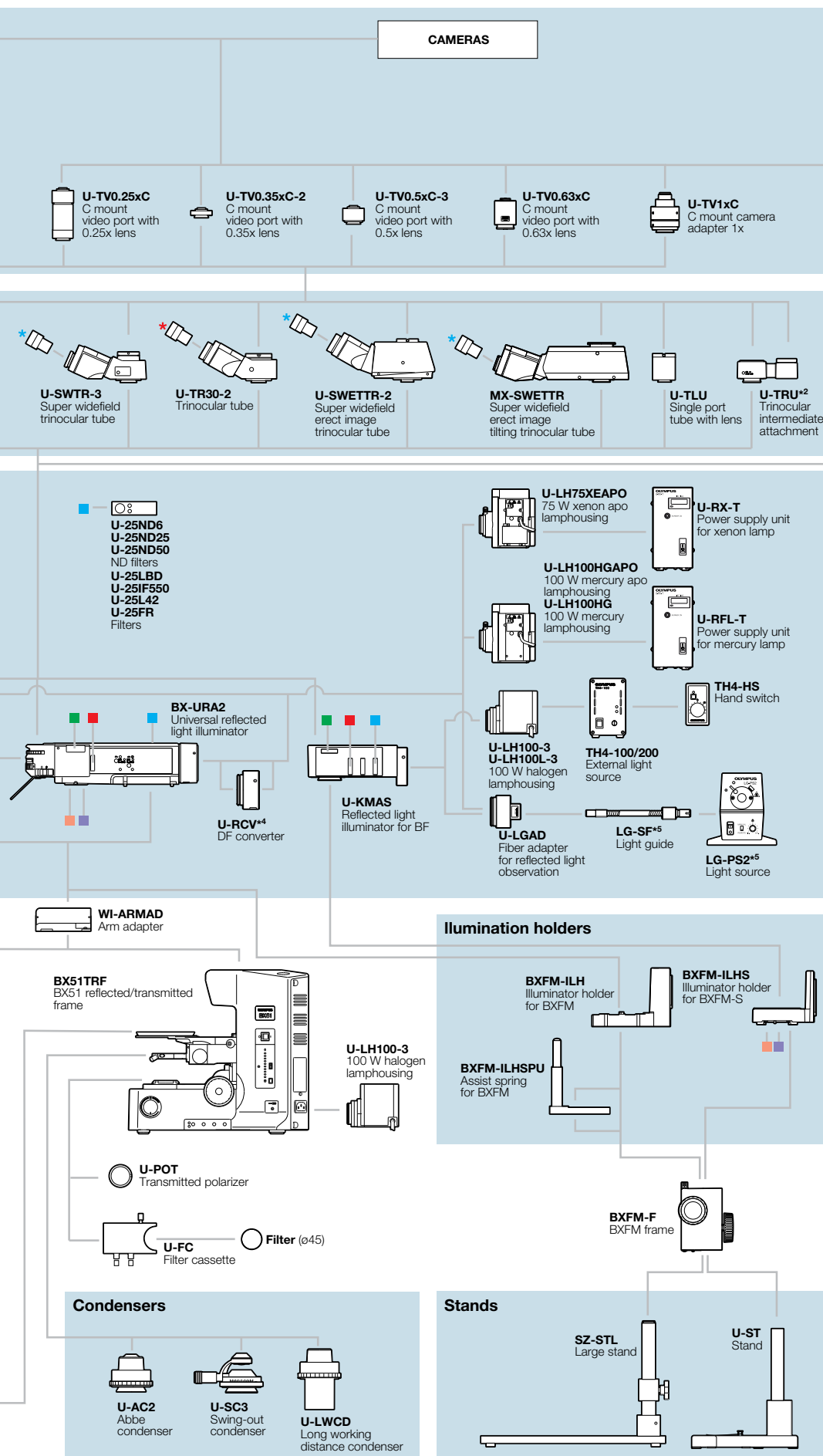
BX51 reflected frame



Stages



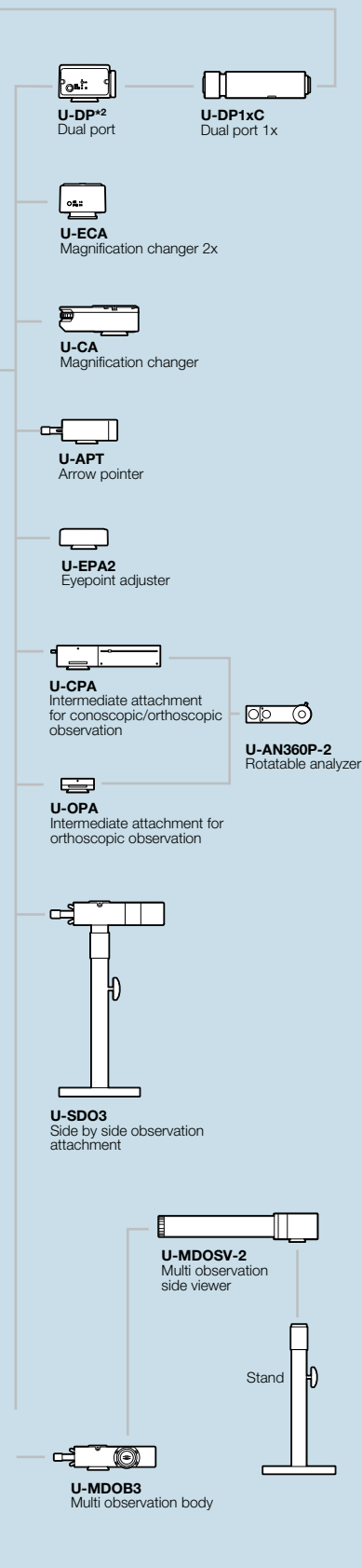
*1 Slight vignetting may occur in the periphery of the field of view in combination with an additional intermediate attachment or observation method. *2 Slight vignetting may occur in the periphery of the field of view in combination with an additional intermediate attachment or observation method. *6 Connection with DP21 microscope digital camera required.



*WHN10x,
WHN10x-H,
CROSS WHN10x
Eyepieces
U-CT30
Centering eyepiece

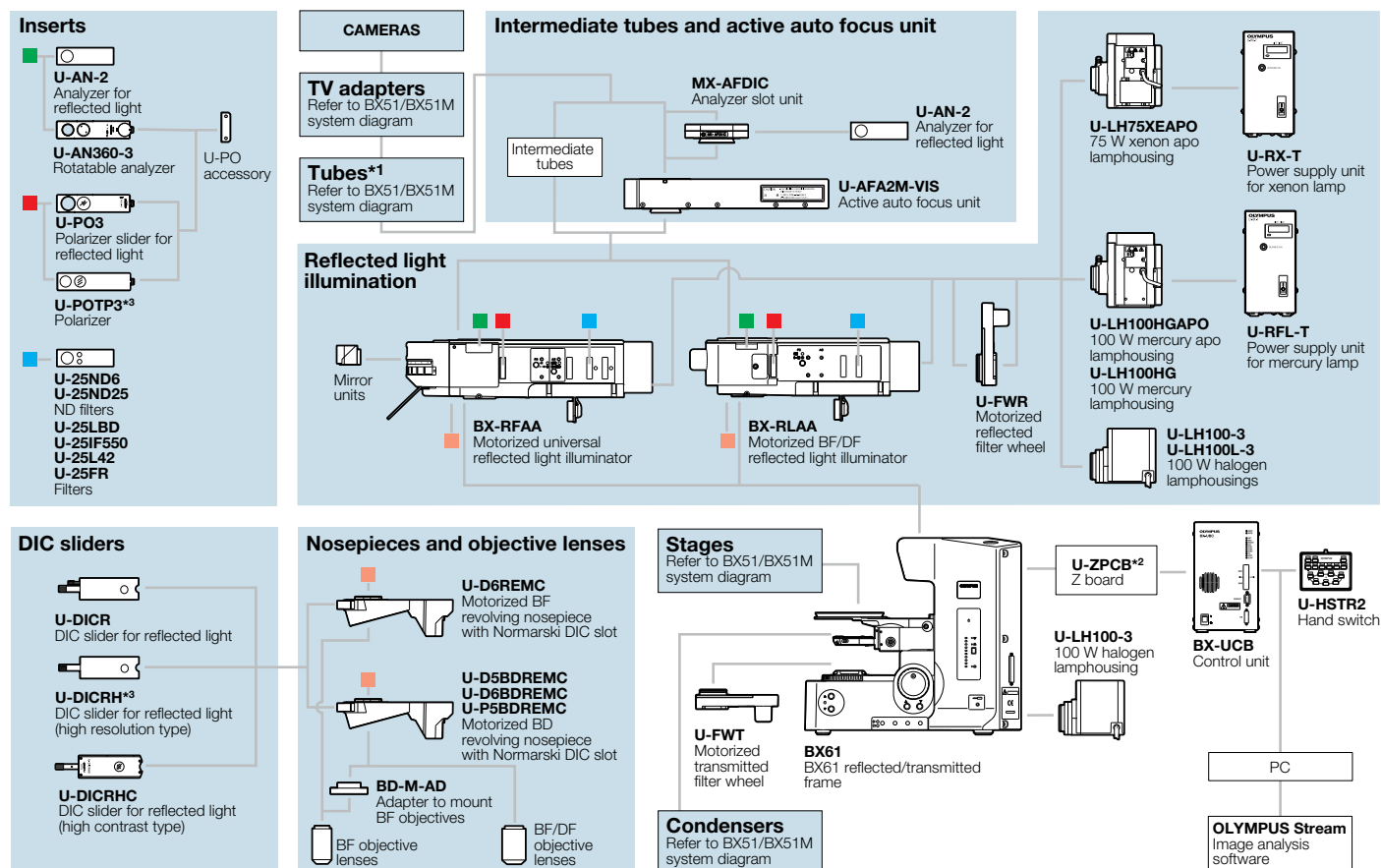
*SWH10x-H,
CROSS SWH10x,
MICRO SWH10x
Eyepieces
U-CT30
Centering eyepiece

Intermediate tubes and discussion attachments



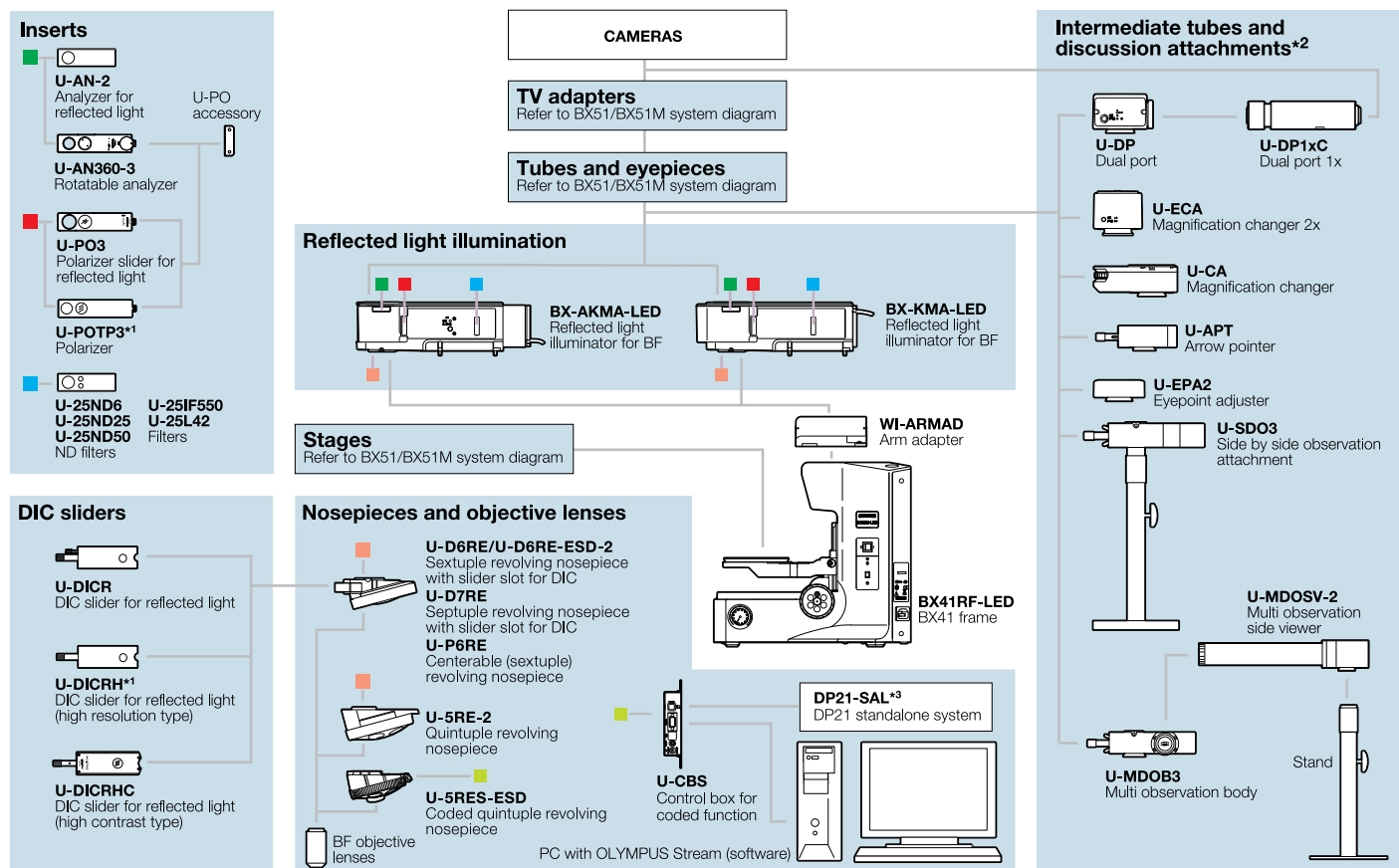
nation with fluorescence illuminator. *3 U-POT3 polarizer should be used in combination with U-DICRH. *4 Exclusively for high intensity burner. *5 Different types may be offered in each area.

BX61 System Diagram



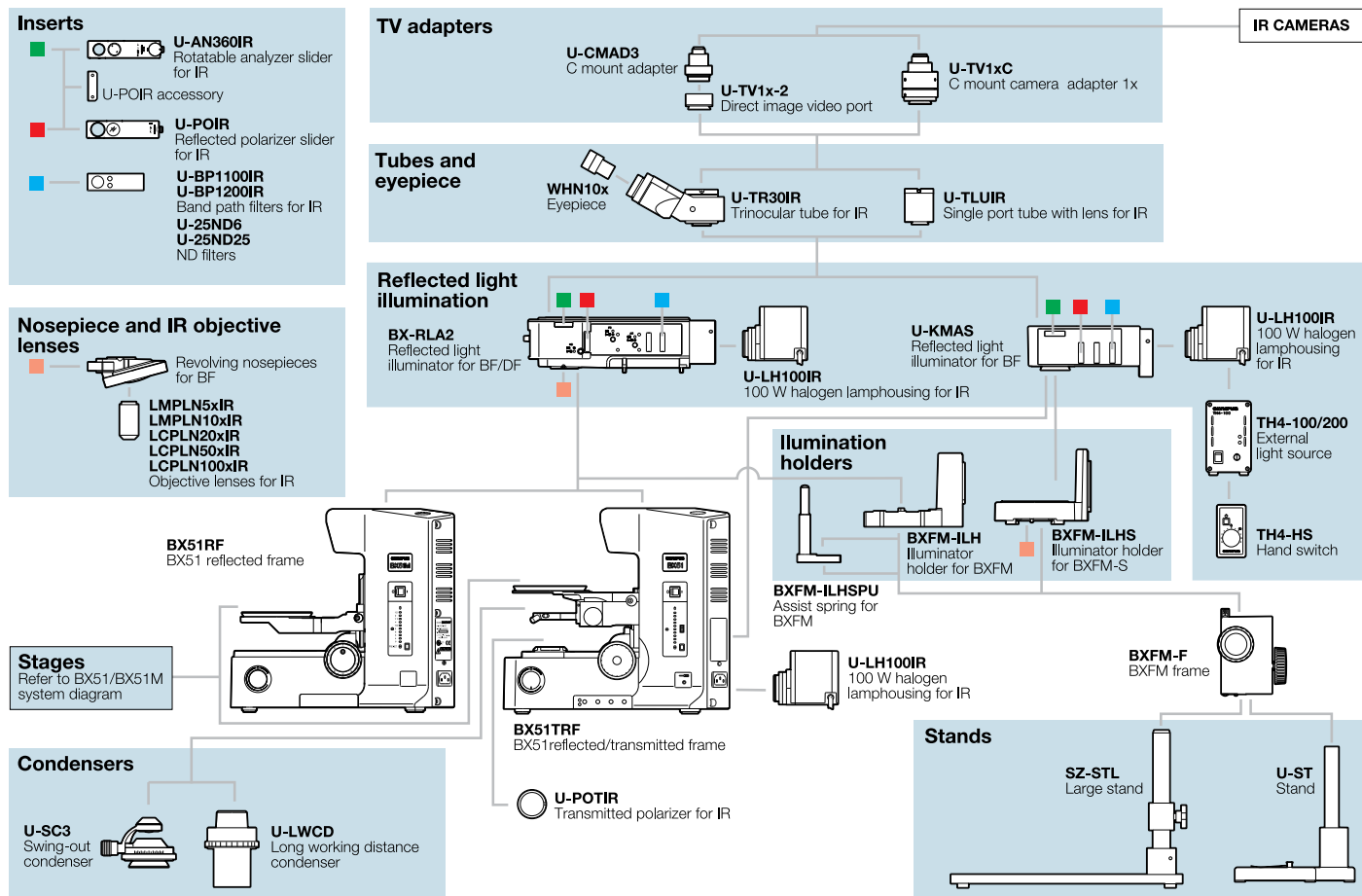
*1 F.N. of the observation tube is up to 22 with AF combination *2 U-ZPCB is not need with AF combination *3 U-POTP3 polarizer should be used in combination with U-DICRH.

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 DP21 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 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-RLA 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-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		<i>Following features are for BX-AKMA-LED only :</i> <i>KPO/oblique illumination</i> <i>AS (with centering mechanism)</i> <i>Oblique illumination position settings</i>
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, 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)		—
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			
ESD performance		—			Surface resistance of 10 ⁹ ohm or less, discharge time of 0.2 s or less*
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		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)		Approx. 6.2 kg (standard combination)

UIS2 Objective Lens Specifications

Objective lenses	Magnifications	N.A.	W.D. (mm)	Cover Glass Thickness*2 (mm)	Silicon Thickness (mm)	Resolution*4 (μm)
MPLAPON	50x 100x	0.95 0.95	0.35 0.35	0 0	— —	0.35 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	150x	0.90	1.0	0	—	0.37
	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
	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*7	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*8	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*8*9	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 *5	5X	0.1	23	—	—	5.50 *9
	10X	0.3	18	—	—	1.83 *9
LCPLN-IR *5	20X	0.45	8.3	0—1.2	0—1.2	1.22 *9
	50X	0.65	4.5	0—1.2	0—1.2	0.85 *9
	100X	0.85	1.2	0—0.7	0—1.0	0.65 *9

*1 Specified oil : IMMOIL-F30CC

*2 The MPLFLN40x objective lens 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 objective lenses

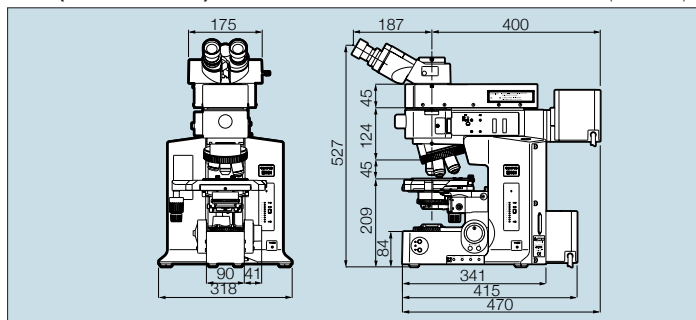
*8 Slight vignetting may occur in the periphery of the field when MPLN-BD series objective lenses are used with high-intensity light source such as mercury and xenon for darkfield observation.

*9 With the use of 1100nm laser

Dimensions

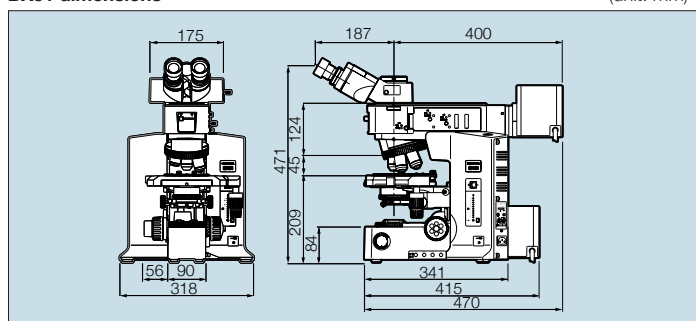
BX61 (AF combination) dimensions

(unit: mm)



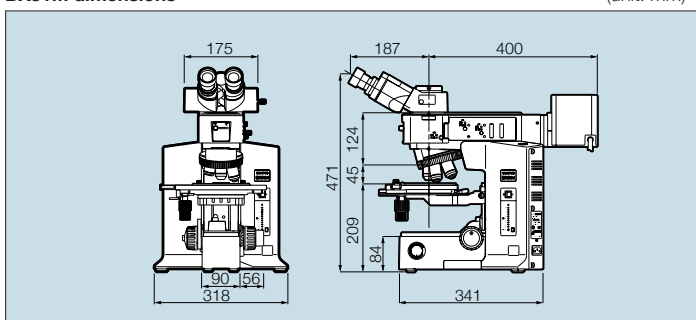
BX51 dimensions

(unit: mm)



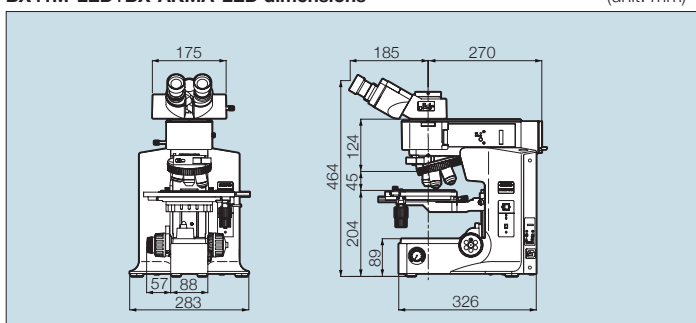
BX51M dimensions

(unit: mm)



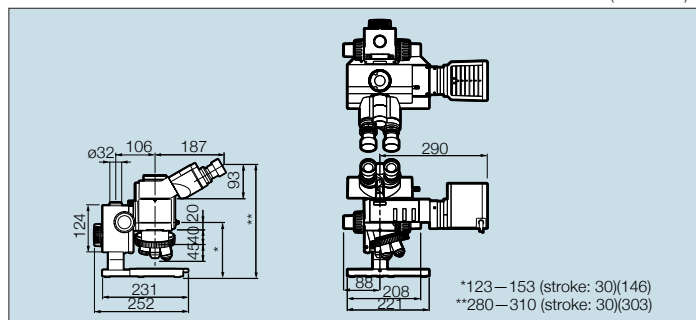
BX41M-LED+BX-AKMA-LED dimensions

(unit: mm)



BXFM-S dimensions

(unit: mm)



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