

Motic®

MORE THAN MICROSCOPY



PA53 BI0/PA53 FS6/PA53 SCAN SERIES

SIMPLE, EFFICIENT, AND USER-FRIENDLY

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PA53 Series

The PA53 series are designed with the user in mind and offer technical support at an affordable price. Motic offers cost-effective, entry-level, high-end microscopes for clinical and life sciences applications. The PA53 series of microscopes have an ergonomic design to help reduce user fatigue during prolonged periods of use, and also feature intuitive control layouts to optimize workflow. The PA53 series microscopes are available in modular configurations, allowing you to choose from cost-effective or advanced configurations to meet your needs, catering to brightfield, fluorescence, darkfield, phase contrast, polarized light and other observation modes, and the PA53 SCAN series offers digital section scanning imaging for a wide range of experimental need.

Motic has developed the Multi-Person Viewing Microscope System for university teaching and experimental training, which can realize multi-person simultaneous observation by adding the accessories of the Viewing Series, and supports 2-people, 3-people and 5-people viewing, which can perfectly meet the needs of consultation, multi-people viewing and training. PA53, as the main unit of the Viewing System, is equipped with an infinity achromatic objective lens and a large field of view eyepiece, which provides a clear image with a wide field of view, and its excellent optical system ensures that all members can see a clear and bright image. Its excellent optical system ensures that the imaging of the covieing system will not be distorted, and all members can see clear and bright images.

▼ 2-people



▼ 3-people



▼ 5-people



PA53 BIO COMPOUND MICROSCOPE SERIES

INTELLIGENT, CONVENIENT FEATURES
ENHANCE WORK EFFICIENCY AND OPERATING COMFORT

The PA53 BIO microscope features an ergonomic design with an adjustable focusing knob, symmetrical controls, and coaxial drive to reduce user fatigue. It offers a 5- or 6-position turret for various objectives and a reliable 2-stage focusing system to accommodate different sample needs.



The transmitted Kohler illumination system supports both 100W halogen and 10W LED bulbs

With excellent heat dissipation, the 100W halogen bulb remains cool during extended use. It lasts over five times longer than the traditional 30W halogen bulb, reducing the need for frequent replacements.

The 10W LED option offers ultra-low energy consumption and an extended lifespan of over 25,000 hours. With light intensity management, it ensures stable color temperature and brightness memory, delivering highly accurate color reproduction in microscopic images.

Eyepieces

To reduce eye strain, the PA53 BIO eyepiece features a wide field of view with a 25mm field number, and the 30-degree observation tube angle provides a comfortable viewing position. This prism also further compensates for chromatic aberration.



Convenient multifunctional lighting selection knob

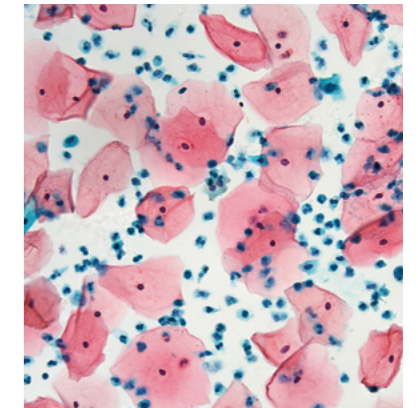
The multifunctional knob combines reflected fluorescence, transmitted illumination, and brightness control, boosting efficiency and convenience.

Eco-friendly ECO function

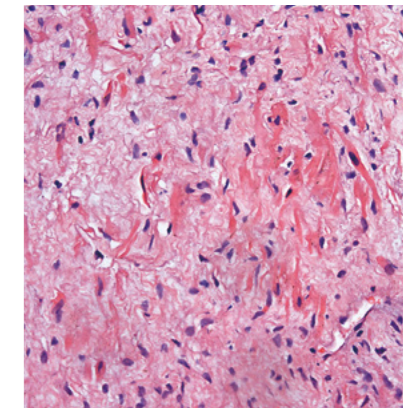
The automatic sleep mode is activated whenever the operator steps away temporarily. This mode protects the sample from the heat of the illuminator, saves energy, extends the lifespan of the bulb, and reduces overall operating costs.

Constant and consistent IL brightness

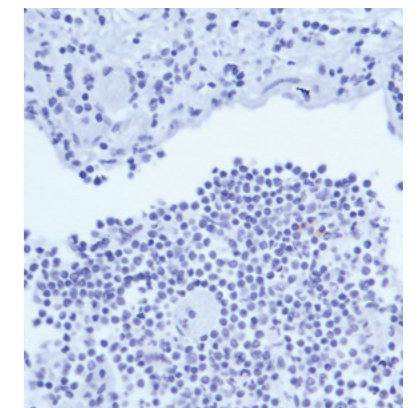
It ensures optimized constant brightness for improved efficiency, maintaining consistent illumination across all magnifications with the IL brightness memory function.



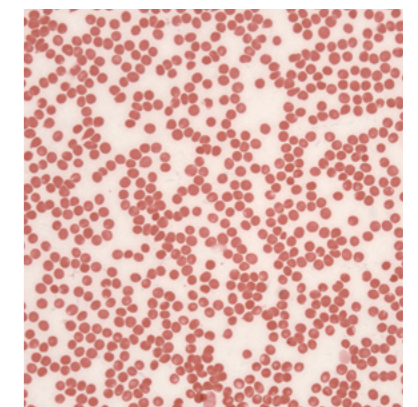
Cytology



H&E staining



Immunohistochemistry

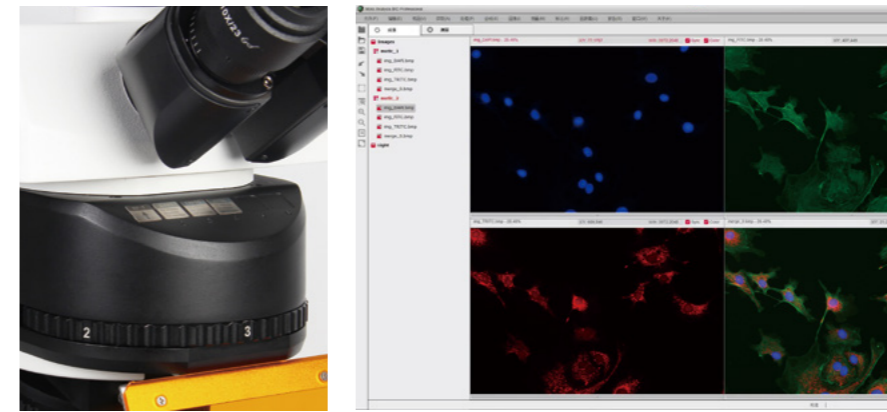


Hematology

PA53 FS6 FLUORESCENCE MICROSCOPE

MEETS ALL THE NEEDS OF LIFE SCIENCE RESEARCH
FROM SIMPLE TO COMPLEX.

- ◆ The PA53 FS6 features a transmitted fluorescence system with a high-brightness LUMOS LED, 130W metal halide lamp, and long-life mercury lamp. It includes a 6-channel coded fluorescence turret for optimal multi-color fluorescence observation, and comes with DAPI, FITC, and TRITC filters. Two additional empty filter holders are provided for custom installations. FISH analysis filters are also available, recommended for use with the long-life LUMOS LED (over 25,000 hours).
- ◆ Excellent optical performance ensures outstanding images in any required observation mode. The adaptable features ensure easy accommodation of any future potential needs. The optimized system and various digital functions enable efficient and accurate execution of daily tasks.

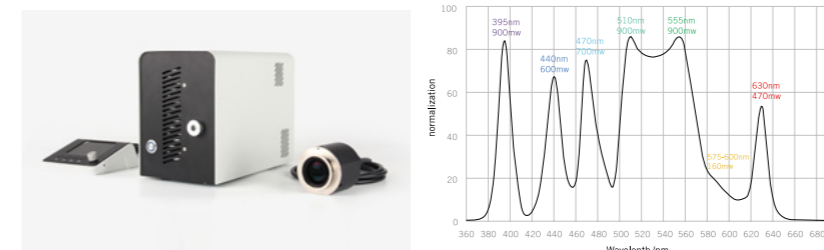


Fluorescence module

Automatically remembers fluorescence channels and their respective brightness levels to prevent stray light interference, eliminating the need to purchase expensive OD6 or OD8 filters to enhance fluorescence. Fluorescence filter blocks can be customized based on specific application needs.

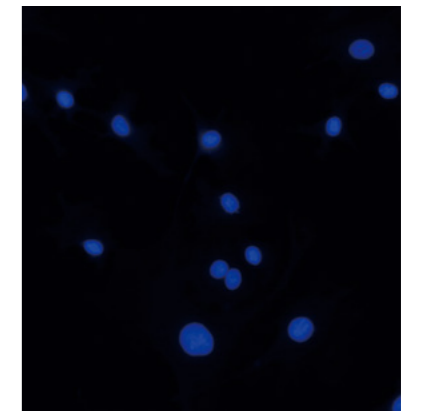
Fluorescence imaging software

The dedicated fluorescence imaging software is a professional digital imaging solution for fluorescence microscopy independently developed by Motic. It enables image capture under different fluorescence microscope colors, supports up to six filter channels for photography, and merges digital images from multiple filter channels to achieve fluorescence effects in digital images

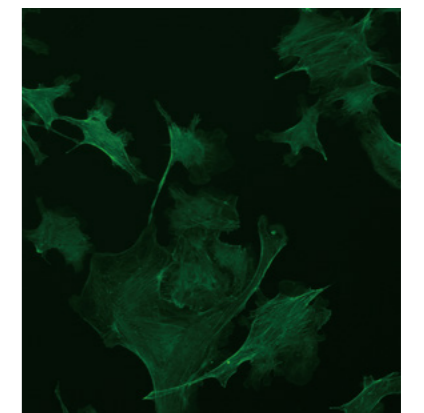


Ultra-high brightness LUMOS LED fluorescence light source

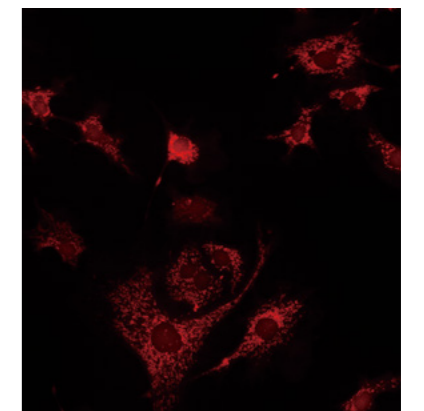
- ◆ High safety
- ◆ Apochromatic optical design
- ◆ Ready to use immediately, no preheating required
- ◆ Prevents stray light interference during fluorescence observation, reducing the risk of misjudgment
- ◆ Exceptional spectral versatility to accommodate a wide range of fluorescence probes on the market
- ◆ Low phototoxicity (mercury lamps generate high temperatures, and the infrared light in their illumination can cause thermal damage to specimens)
- ◆ Ultra-long lifespan: compared to traditional mercury lamps (200-hour lifespan), LED light sources last over 20,000 hours
- ◆ Independent control of each LED channel to match multi-channel filter sets, eliminating the need for multiple fluorescence filter blocks and reducing filter block costs



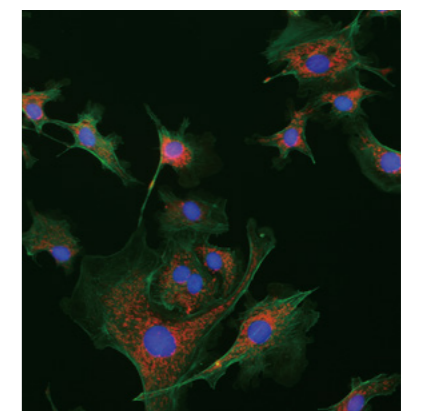
DAPI Excitation filter (wavelength): D373/28x nm
Dichroic mirror (wavelength): 415DCLP nm
Emission filter (wavelength): D460/50m nm



FITC Excitation filter (wavelength): D480/30x nm
Dichroic mirror (wavelength): 505DCLP nm
Emission filter (wavelength): D535/40m nm



TRITC Excitation filter (wavelength): D540/25x nm
Dichroic mirror (wavelength): 565DCLP nm
Emission filter (wavelength): D605/55m nm



RGB three-channel fusion

PA53 SCAN DIGITAL PATHOLOGY SCANNER

PROVIDING HIGH-QUALITY SOLUTIONS
FOR WSI SCANNING

The PA53 scanning series is a digital slide microscope scanning platform independently developed and designed by Motic Group Co., Ltd. It scans and seamlessly stitches traditional glass slides, creating digital slides that include all the information from the original glass slide, known as Whole Slide Imaging (WSI). This system can be used for scanning, browsing, storing, and transmitting both routine and frozen sections. It offers four scanning modes: standard scan, high-precision scan, extended depth-of-field scan, and Z-stack scan.

- ◆ The PA53 BIO SCAN features a completely new structural design, with a compact body, dual-slide capacity, and high cost-effectiveness. It is primarily used for brightfield, phase contrast, polarized light, and other types of digital WSI scanning. It offers selectable scanning magnifications of 2X, 4X, 10X, 20X, 40X, 50X (oil), and 100X (oil).
- ◆ The PA53 FS6 SCAN supports scanning of various slides, including paraffin sections, frozen sections, cells, and microorganisms, in both brightfield and fluorescence modes with different stains. It supports dual-slide throughput, and components such as the fluorescence light source, filter blocks, objectives, and stage can be customized to meet the specific needs of customers.



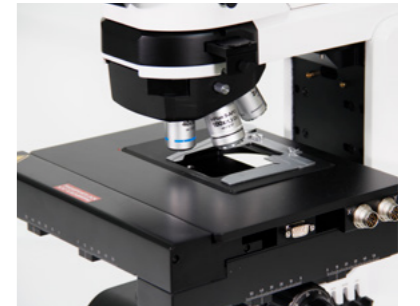
Research-grade scanning head

Dual-camera design, with a 1.2 MP auxiliary focus camera and a 5 MP high-definition sCMOS imaging camera (100:0, 0:100).



Illumination module

Standard 100W halogen lamp and LUMOS LED, enabling digital WSI scanning in brightfield, fluorescence, phase contrast, polarized light, and other modes.



Motorized stage

Motorized stage with a travel range of 100 x 100 mm (4" x 4"), ± 3 μ m precision, and repeatability < 1 μ m. It supports physical limit operations and features a hard anodized surface treatment for scratch and chemical corrosion resistance.

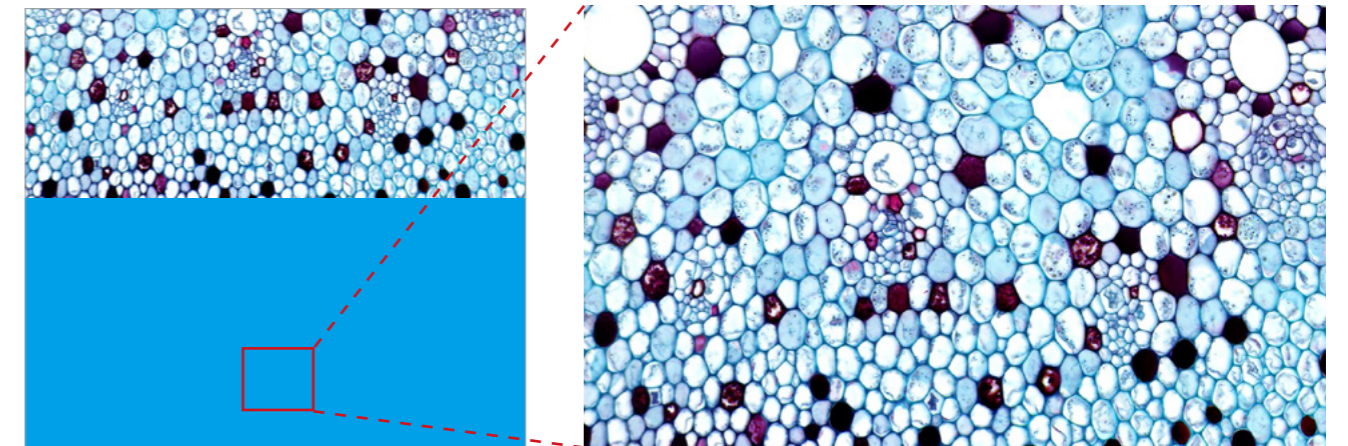


Motorized objective nosepiece

Motorized 5-position coded objective nosepiece, with automatic magnification recognition and scale parameter adjustment via software. It also supports traceable viewing of scan image parameters at any magnification.

Achieving fast scanning and seamless stitching of slides

The motorized control of the microscope scanning platform (X/Y/Z/Objective nosepiece, etc.) enables fast, stable digital slide scanning with seamless stitching across different regions to produce a whole-slide digital image. The system allows zooming, high-definition image cropping, editing, and exporting of WSI images. By using the PA53 SCAN digital slide imaging scanning system, glass slides are digitized, creating personalized, complete digital slides that can be stored long-term, saving physical storage space for glass slides. These digital slides can also be burned onto discs, providing convenient access for patients and hospitals for slide sharing and viewing.



Whole-field scanning of section (lily stem section)

Detailed observation of the area of interest



Moticam S

Research-grade digital sensor

The new generation of Moticam S series cameras marks a significant milestone in the evolution of Motic digital microscopy. These new Moticam digital cameras are equipped with the latest research-grade sCMOS sensors and feature a self-developed hardware image processing system, providing customers with cost-effective and professional digital microscopy solutions.

Designed and manufactured in strict accordance with German quality standards, the Moticam series is suitable for a wide range of applications, including medical, research, and industrial fields. With their user-friendly design and exceptional adaptability, the Moticam series has earned global recognition. We are confident that the new generation of Moticam cameras will bring you a whole new experience.

Key Features:

- ◆ Ultra-fast frame rate with USB 3.1 interface
- ◆ Easy replacement for older imaging devices
- ◆ Compact size and lightweight design
- ◆ Dual-color LED status indicator

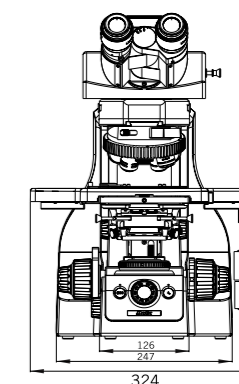
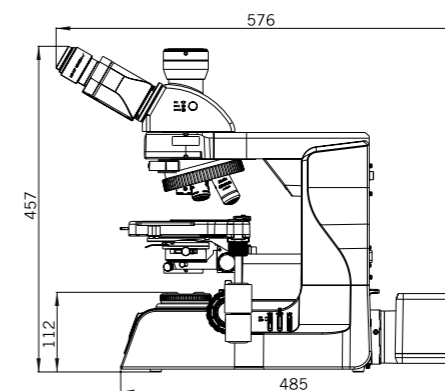
Moticam S Technical Specifications

Moticam	S1	S3	S6	S12	S20	S5 Pro Lite	S5 Pro +
Sensor Type	sCMOS						
Sensor Size	1/3"	1/2.8"	1/1.8"	1/1.7"	1"	2/3"	2/3"
Resolution	1.2M	3M	6M	12M	20M	5M	5M
Active Area (Diagonal)	6.09mm	6.44mm	8.92mm	9.33mm	15.86mm	11.1mm	11.1mm
Pixel Size	3.75µm x 3.75µm	2.5µm x 2.5µm	2.4µm x 2.4µm	1.85µm x 1.85µm	2.4µm x 2.4µm	3.45µm x 3.45µm	3.45µm x 3.45µm
Real-Time	1280x960 @120fps	2048x1536 @60fps	3072x2048 @30fps	4000x3000 @25fps	5472x3648 @25fps	2448x2048 @35.7fps	2448x2048 @68.3fps
Display Modes	640x480 @240fps	1920x1080 @60fps	1536x1024 @50fps	2048x1080 @50fps	2736x1824 @50fps	1224x1024 @88.4fps	1224x1024 @175.8fps
Scan Mode	Progressive						
Shutter Mode	Rolling Shutter				Global Shutter		
Data Transfer	USB3.1						
Exposure Time	15us~2sec	21us~2sec	16us~2sec	22us~2sec	15us~2sec	14us~2sec	7us~2sec
Sensitivity (G)	2350 mV @ 1/30 sec	600 mV @ 1/30 sec	425 mV @ 1/30 sec	280 mV @ 1/30 sec	461 mV @ 1/30 sec	1146 mV @ 1/30 sec	1146 mV @ 1/30 sec
Focusing Distance	12mm	12mm	16mm	16mm	25mm	16mm	16mm
Power Consumption	less1.0W@ 5V(USB-supply)				less1.5W@ 5V(USB-supply)		
Lens Mount	CS-Mount			C-Mount		CS-Mount	
Supported Software	TWAIN, SDK and DirectShow Driver						
Recommended OS	Windows 7/8/10, Mac OSX 10.9 or above, Linux						
Recommended PC Configuration	2GHz Dual-Core CPU, 2GB RAM, 512MB Graphics						
Operating Temperature	-10°C to +60°C, non-condensing						
Package Includes	C-ring, Calibration Slide, USB3.1 Cable, Image Plus 3.0 for PC/OSX/Linux						

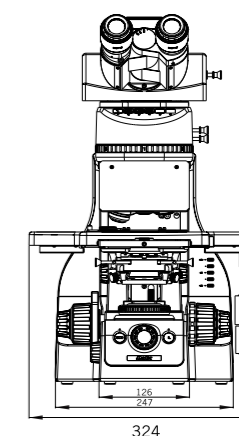
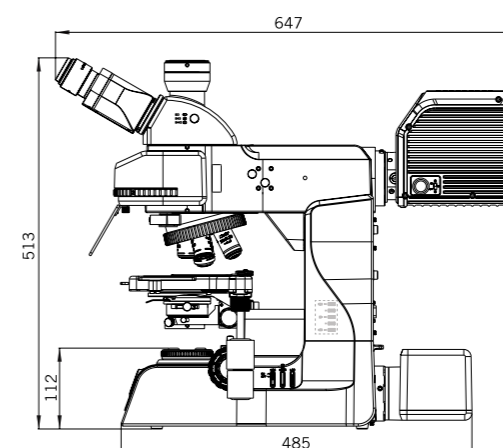
PA53 BIO / PA53 FS6 / PA53 SCAN

SPECIFICATIONS

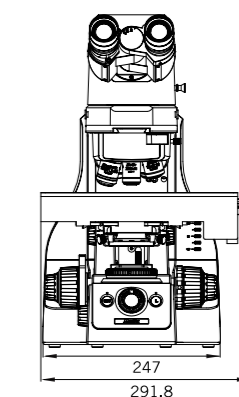
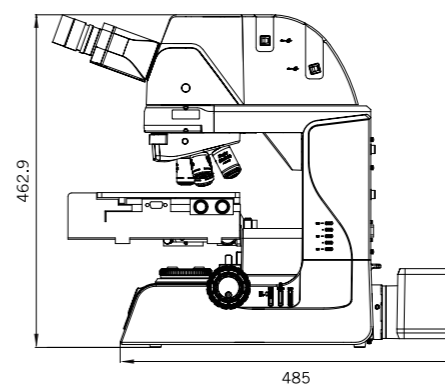
PA53 BIO



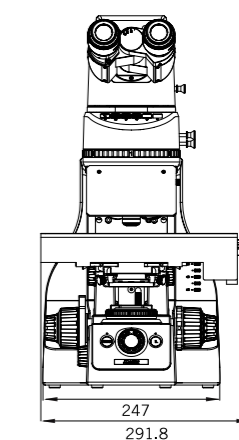
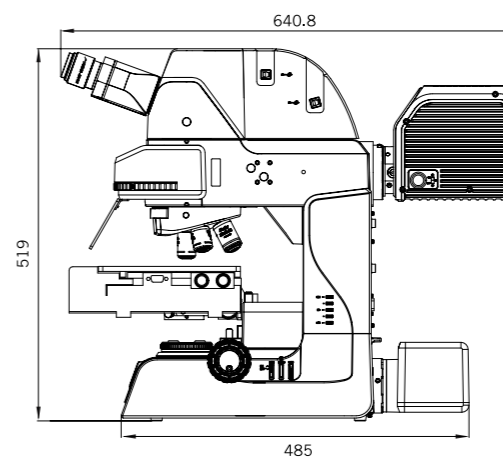
PA53 FS6/
PA53 FS6(Plus)



PA53 BIO SCAN

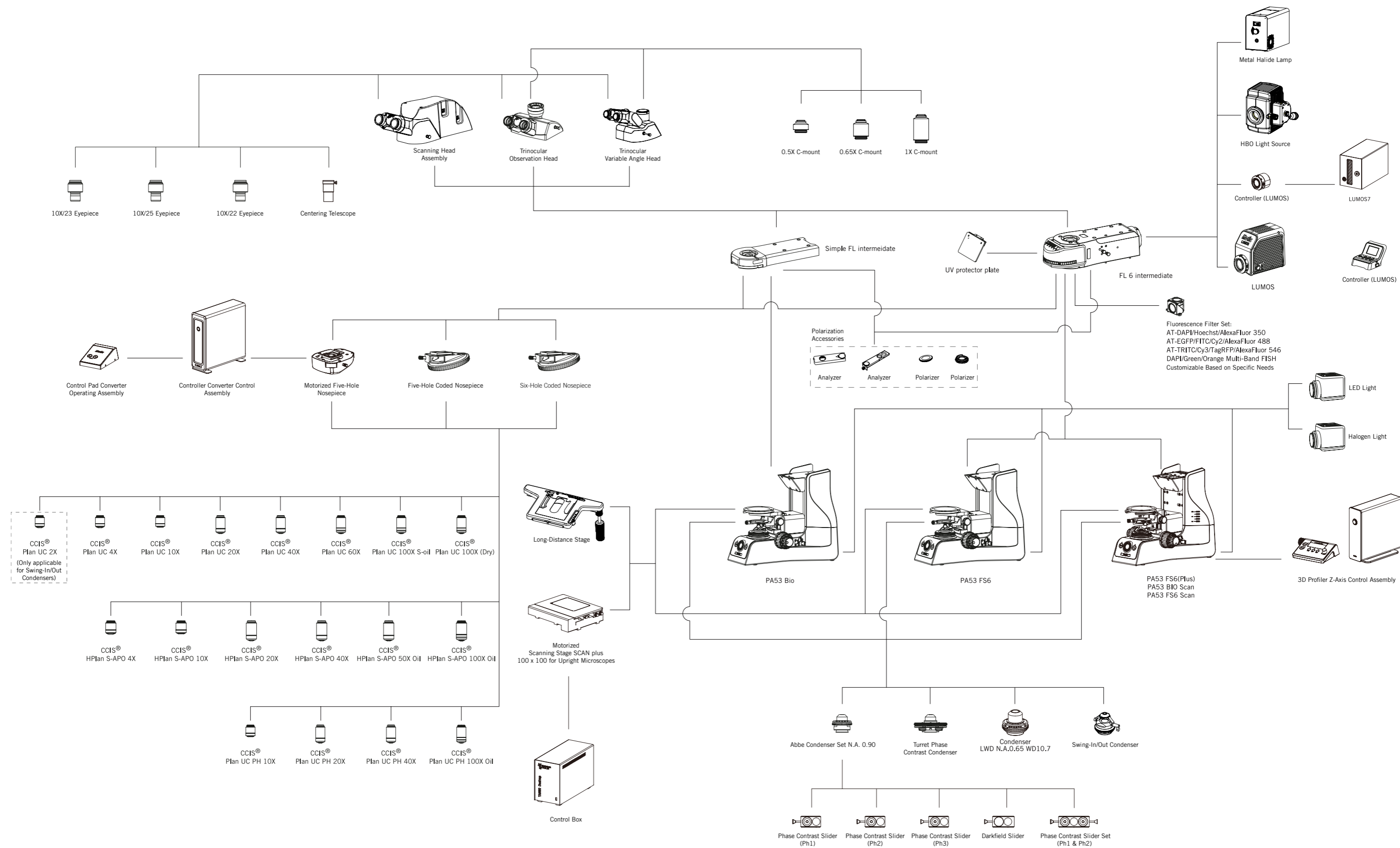


PA53 FS6 SCAN



**All measurements in millimeters (mm)

SPECIFICATIONS



SPECIFICATIONS

PA53 BIO

Model	PA53 BIO
Optical system	Infinity-Corrected Optical System (CCIS®)
Focusing system	Ergonomic manual focusing
Illumination system	Transmitted light illumination system
Transmitted illumination	Köhler illumination with 100W long-life halogen lamp or 10W LED lamp
Observation tube	30° inclined trinocular head (100:0, 20:80, 0:100), adjustable angle head (0:100, 50:50, 100:0)
Eyepiece	Wide-field eyepiece (FN23) 10X/23mm, diopter adjustable or Ultra-wide-field eyepiece (FN25) 10X/25mm, diopter adjustable
Nosepiece	Encoded five-position nosepiece (optional encoded six-position nosepiece)
Plan UC series	Plan UC 2X/0.05, W.D=7.2mm Plan UC 4X/0.1, W.D=30.5mm,CG=0.17 Plan UC 10X/0.25, W.D=17.4mm,CG=0.17 Plan UC 20X/0.45,W.D=0.8mm,CG=0.17 Plan UC 40X/0.65,W.D=0.6mm,CG=0.17 Plan UC 60X/0.8,W.D=0.35mm,CG=0.17 Plan UC 100X/1.25 Oil,W.D=0.16mm,CG=0.17 Plan UC 100X/0.8,W.D=1.7mm,CG=0.17
Plan UC Phase Contrast series (optional)	Plan UC PH 10X/0.25, W.D=17.4mm,CG=0.17,ph1 Plan UC PH 20X/0.45,W.D=0.8mm,CG=0.17,ph2 Plan UC PH 40X/0.65,W.D=0.6mm,CG=0.17,ph2 Plan UC PH 100X/1.25 Oil,W.D=0.16mm,CG=0.17,ph3
Plan UC Fluor series (optional)	Plan UC Fluor 4X/0.13,W.D=17.3mm,CG=0.17 Plan UC Fluor 10X/0.3,W.D=11.7mm,CG=0.17 Plan UC Fluor 20X/0.5,W.D=2.2mm,CG=0.17 Plan UC Fluor 40X/0.75,W.D=0.7mm,CG=0.17 Plan UC Fluor 50X/1.20 oil,W.D=0.14mm,CG=0.17 Plan UC Fluor 100X/1.3 oil,W.D=0.1mm,CG=0.17
Plan Apochromat series (optional)	Plan APO 4X/0.15 W.D.=20mm,CG=0.17 Plan APO 10X/0.35 W.D.=4.2mm Plan APO 20X/0.75 W.D.=0.55mm Plan APO 40X/0.95 W.D.=0.18mm Plan APO 100X/1.3 oil. W.D.=0.25mm
Focusing mechanism	Travel range: 29.5mm, coarse and fine focus knobs Coarse focus: 17.7mm/rotation, fine focus: 0.1mm/rotation, upper limit stop, tension adjustment ring
Condenser	Abbe condenser N.A. 0.90 (optional turret phase contrast/darkfield condenser, LWD N.A. 0.65 WD 10.7 condenser, swing-in/swing-out condenser)
Stage	Double-layer clip long-working-distance stage (optional double-layer clip mechanical stage, motorized stage)
Software	Motic Analysis Bio (requires Moticam S camera)

PA53 FS6

Model	PA53 FS6
Optical system	Infinity-Corrected Optical System (CCIS®)
Focusing system	Ergonomic manual focusing
Illumination system	Transmitted light illumination system / Incident fluorescence illumination system
Transmitted illumination	Köhler illumination with 100W long-life halogen lamp (optional mercury lamp or metal halide lamp)
Incident fluorescence illumination	LUMOS high-brightness LED fluorescence
Observation tube	30° inclined trinocular head (100:0, 20:80, 0:100)
Eyepiece	Wide-field eyepiece (FN23) 10X/23mm, diopter adjustable
Nosepiece	Encoded five-position nosepiece (optional encoded six-position nosepiece)
Plan UC Fluor series	Plan UC Fluor 4X/0.13,W.D=17.3mm,CG=0.17 Plan UC Fluor 10X/0.3,W.D=11.7mm,CG=0.17 Plan UC Fluor 20X/0.5,W.D=2.2mm,CG=0.17 Plan UC Fluor 40X/0.75,W.D=0.7mm,CG=0.17 Plan UC Fluor 50X/1.20 oil,W.D=0.14mm,CG=0.17 Plan UC Fluor 100X/1.3 oil,W.D=0.1mm,CG=0.17

PA53 FS6

Model	PA53 FS6
Plan UC Phase Contrast series (optional)	Plan UC PH 10X/0.25, W.D=17.4mm,CG=0.17,ph1 Plan UC PH 20X/0.45,W.D=0.8mm,CG=0.17,ph2 Plan UC PH 40X/0.65,W.D=0.6mm,CG=0.17,ph2 Plan UC PH 100X/1.25 Oil,W.D=0.16mm,CG=0.17,ph3
Focusing mechanism	Coarse focus: 17.7mm/rotation, fine focus: 0.1mm/rotation Upper limit stop, tension adjustment ring
Condenser	Abbe condenser N.A. 0.90 (optional turret phase contrast/darkfield condenser, LWD N.A. 0.65 WD 10.7 condenser, swing-in/swing-out condenser)
Stage	Double-layer clip long-working-distance stage (optional double-layer clip mechanical stage, motorized stage)
Fluorescence filter block set	DAPI/Hoechst/AlexaFluor 350 EGFP/FITC/Cy2/AlexaFluor 488 TRITC/Cy3/TagRFP/AlexaFluor 546 DAPI/Green/Orange #1 FISH (Customizable according to specific needs)
Software	Motic Analysis Bio (requires Moticam S camera)

PA53 SCAN

Model	PA53 BIO SCAN	PA53 FS6 SCAN
Optical system	Infinity-Corrected Optical System (CCIS®)	
Focusing system	Motorized focusing, automatic depth-of-field fusion focusing	
Illumination system	Transmitted light illumination system	Transmitted light illumination system / Incident fluorescence illumination system
Transmitted illumination	Köhler illumination with 100W long-life halogen lamp (optional 10W LED lamp)	
Incident Fluorescence Illumination	/	LUMOS high-brightness LED fluorescence light source
Observation Tube	Dedicated PA series scanning head (100:0, 0:100)	
Eyepiece	Wide-field eyepiece 10X/25mm, diopter adjustable	Wide-field eyepiece 10X/23mm, diopter adjustable
Scanning Camera	Built-in dual-camera design with 1.2 MP auxiliary focusing and 5 MP high-definition imaging sCMOS camera	
Nosepiece	Motorized encoded five-position nosepiece	
Plan UC Fluor Series	Plan UC 2X/0.05, W.D=7.2mm HPlan SAPO 10X/0.30,W.D=11.7mm,CG=0.17 HPlan SAPO 20X/0.50,W.D=2.2mm,CG=0.17 HPlan SAPO 40X/0.75,W.D=0.7mm,CG=0.17 HPlan SAPO 50X/1.20 oil,W.D=0.14mm,CG=0.17 HPlan SAPO 100X/1.30 oil,W.D=0.10mm,CG=0.17	
Focusing Mechanism	Travel range: 29.5mm, coarse and fine focus knobs Coarse focus: 17.7mm/rotation, fine focus: 0.1mm/rotation Upper limit stop, tension adjustment ring	
Condenser	Abbe condenser N.A. 0.90 (optional turret phase contrast/darkfield condenser, LWD N.A. 0.65 WD 10.7 condenser, swing-in/swing-out condenser)	
Stage	Motorized stage, 100x100mm XY, with integrated linear measurement system, maximum movement speed of 240mm	Motorized stage, 100x100mm XY, with integrated linear measurement system, maximum movement speed of 240mm (with grating)
Fluorescence Filter Block Set	/	DAPI/Hoechst/AlexaFluor 350 EGFP/FITC/Cy2/AlexaFluor 488 TRITC/Cy3/TagRFP/AlexaFluor 546 DAPI/Green/Orange #1 FISH (Customizable according to specific needs)
Software	Motic VM 3.0 for PA53 BIO, Bio Scan software dongle	Motic VM 3.0 for PA53 FS6, FS6 Scan software dongle

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Design Change: The manufacturer reserves the right to make changes in instrument design in accordance with scientific and mechanical progress, without notice and without obligation.

Designed in Hong Kong

Updated: 24.01.2025



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