



## PA43 Microscope

Clinical, Routine-Lab Microscope  
Affordable Quality that Exceeds Expectations

# PA43 Microscope

Robust, superior quality

A perfect Workhorse for Clinical routine work

Motic Scientific has always kept to two mission statements in microscope design: providing technologies for people at an affordable price, and always keeping the user's workflow in mind.

The PA43 is a model of this design philosophy. Made for routine work, this new microscope has a simple design and is very easy to use, but also does not compromise on quality and ergonomic features. It is a microscope meant to be used for long periods of time, with the highest quality of experience.

The modularity of the PA43 microscopes offers you flexibility in choosing a configuration that suits your usage. From cost-effective solutions, to high-quality optical systems that meet requirements for diagnosis purposes, or specific configurations to meet various dedicated applications.

The microscope is not only modular but also flexible in design, and can be upgraded at any time, whenever needed.



## Comfortable to use. Fulfills the demanding requirements of long operation times in routine applications

### **Kohler illumination with option of Halogen or LED illumination**

The PA43 is equipped with a transmitted Kohler illumination system to ensure that the best optical quality can be guaranteed. Additionally, users have the flexibility of choice to choose between the traditional 30W halogen illuminator which can maintain the most comfortable color temperature for observation; or the LED illuminator with stable color temperature (high color temperature or low color temperature versions are both available).



### **Environmentally Friendly ECO function**

An automatic power saving mode is engaged whenever an operator leaves the microscope temporarily. The timeframe to activation is selectable by the user, and is enabled to protect your samples from the heat of the illuminator. ECO mode also results in energy savings which will extend the lifetime of the lamp, and also reduces overall operational costs.



### **Consistent, Even Illumination with IL Function**

Working efficiency can be further increased by providing an optimized, consistent, even brightness in illumination with the IL function. With the IL function engaged, the brightness level will be maintained even if the observation magnification is changed during observation.

### **Rackless stage**

With a specially designed stage with a ceramic coated surface, the PA43 not only provides a durable and reliable stage surface, but also an easy-to-use ergonomic stage with zero backlash. It gives the user great amounts of added operating comfort and efficiency.



### **Variety of contrasting accessories aim for different applications and need**

The PA43 holds a good variety of contrast accessories that are available and easily upgradable to meet different requirements. Phase contrast methods for all magnifications are available for various microbiology applications; sperm observation and motility tests; diatom observations for oceanic and environmental studies, and many other possible applications.

Darkfield accessories up to 40x objective magnification allow the PA43 to perform Treponema bacteria swimming pattern studies, blood cell studies for natural therapy and other similar applications.

Polarizing contrast accessories provide solutions to applications like protein crystal studies; muscle fiber and tissue observations, gout and kidney stone observations, or even clothing fiber observations.



# Applications

Superior optical quality that can satisfy multiple demanding clinical applications

## Pathology and Cytology

Pathology is sometimes considered to be the foundation of medicine, and the study of biopsy tissue has brought us to many different methods of disease diagnosis. Whether it be H&E slides or Immunohistochemistry studies (IHC), the PA43 provides a very reliable, affordable platform to meet the research requirements. With options for both manual observation or digital image capture for quantitative study, the PA43 also boasts a series of high-quality objectives with best-in-class resolution. It is also a very useful microscope for Cytology, such as for PAP-smears, TCT samples for cervical cancer diagnosis.

## Cytogenetics

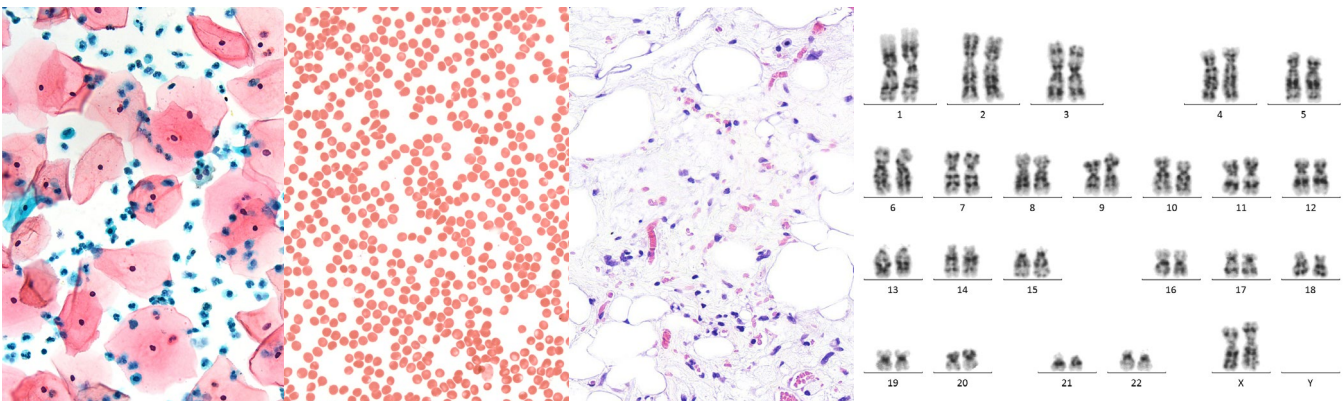
Karyotyping has always been a gold standard for the diagnosis of genetic disease, pre-natal screening and leukemia diagnosis. Specialists need good resolution through their 100x objectives, as they need to scan through the slides with an oil objective to look for the right Metaphase to study. The rackless stage of the PA43 offers smooth movement of the stage with zero-backlash. Together with our quality oil objectives, the PA43 becomes an excellent companion for Cytogeneticists.

## Hematology

White Blood cell classification and counting is commonplace for both routine screening and Leukemia diagnosis. Although we now have fully automatic screening systems to do most of the tests, confirmations under microscopes are still important and often demanding. Other than Motic's routine oil immersion objective, specially designed non-cover glassed objectives are also available as part of the PA43's accessory lineup. Moreover, the PA43 is also very ideal for Karyotyping for Leukemia studies.

## Toxicology and Biodosimetry

Constant monitoring of various environmental hazard on human DNA damage is always a topic for clinical specialists and pharmaceutical companies. The gold standards of evaluation, such as "Chromosome Aberration Scoring", "Dicentric Scoring", and "Micro-nuclei (in-vitro and in-vivo)" are all microscope-based methods that are very labor intensive. The PA43 provides a comfortable, quality solution for these intensive, demanding routine tests.





# Digitizing your Applications

## Moticam S-line Microscope Cameras



Moticam	S1	S3	S6	S12	S20	Moticam S5 Pro Lite	Moticam 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
Imaging Area (Diagonal)	6.09mm	6.44mm	8.92mm	9.33mm	15.86mm	11.1mm	11.1mm
(Diagonal) 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
Max. Frame Rate	1280x960@120fps	2048x1536@60fps	3072x2048@30fps	4000x3000@25fps	5472x3648@25fps	2448x2048@35.7fps	2448x2048@68.3fps
	640x480@240fps	1920x1080@60fps	1536x1024@50fps	2048x1080@50fps	2736x1824@50fps	1224x1024@88.4fps	1224x1024@175.8fps
Scan Mode	Progressive						
Shutter Mode	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter	Rolling Shutter	Global 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
Focusable Lens	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	
Support Device	TWAIN, SDK and DirectShow Driver						
Supported OS (Recommended)	Higher than Microsoft Windows7/8/10, MAC OSX10.9 and Linux						
Minimum Computer Requirements (Recommended)	2GHz Dualcore, RAM memory 2GB and Video Memory Min 512MB						
Operating Temperature	From -10 to + 60 degree celsius non condensing						
Package Includes	CS Ring Adaptor, Calibration Slide, USB3.1 cable, Image Plus 3.0 for PC / OSX / Linux(Accessories Package) Focusable Lens, 30mm and 38mm Eyepiece Adapter, Macro Tube and Macro Tube Calibration dot						



# PA53 FS6

## Intelligent Upright Microscopes for Clever Fluorescence Management

### PA53 FS6

When even more demanding requirements are needed, the user can elect to use an even more full featured version of the PA series microscopes. The PA53 series provides all the superior quality needed for your demanding clinical and research requirements. A PA53 FS6 with an LED illuminator is the perfect solution for high quality fluorescent imaging such as FISH, Immunofluorescence, and many other fluorescent research applications.

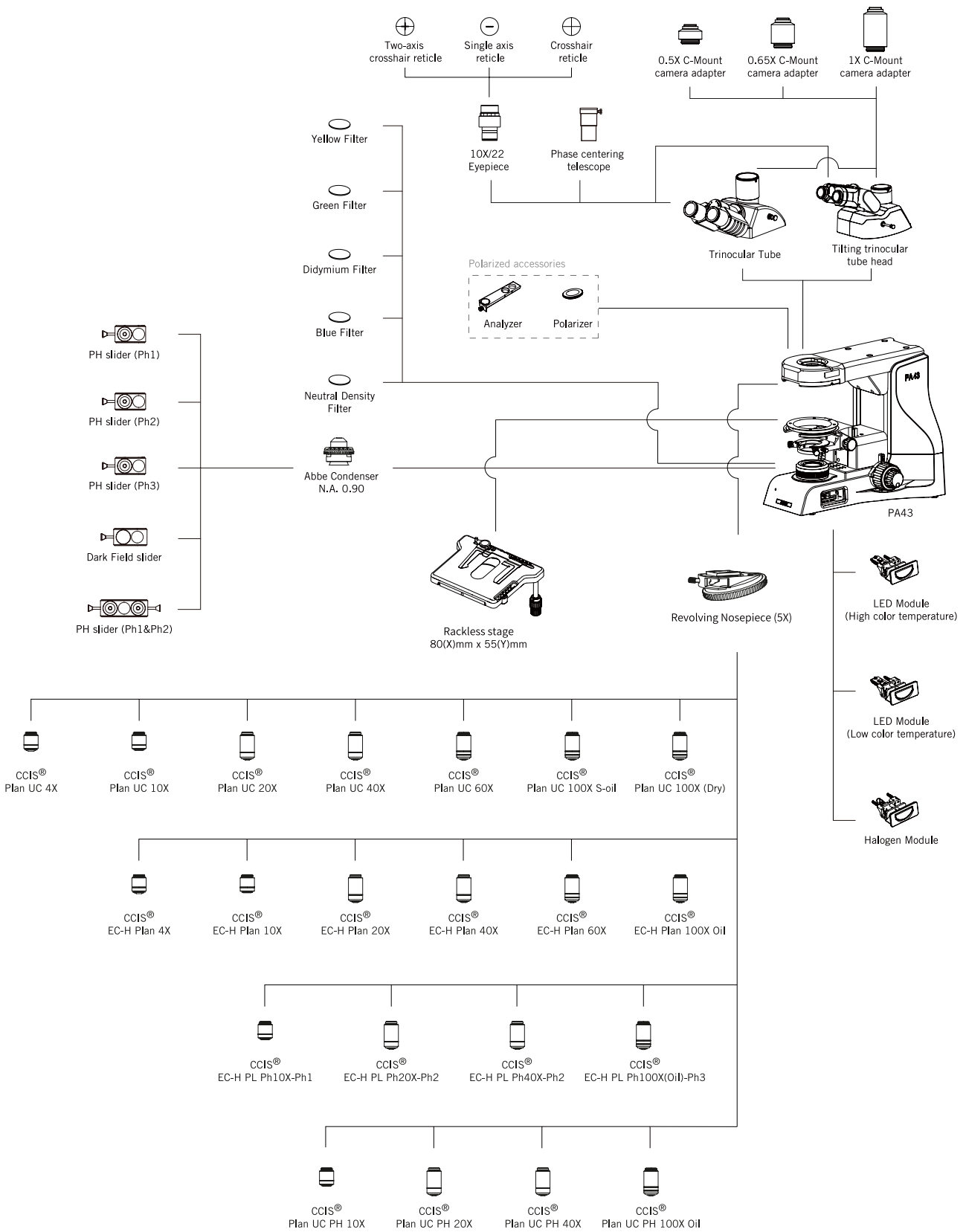


### Software - Motic Analysis Bio

Digital imaging and automation make the life of a clinical specialist easier and more productive. Analysis Bio is our entry into a new generation of software, and not only makes the operation of the PA43 and PA53 simple and easy, but also provides the breadth of analysis and measurement tools needed for digital documentation and analysis.



# PA43 System Diagram



# PA43 Technical Specifications

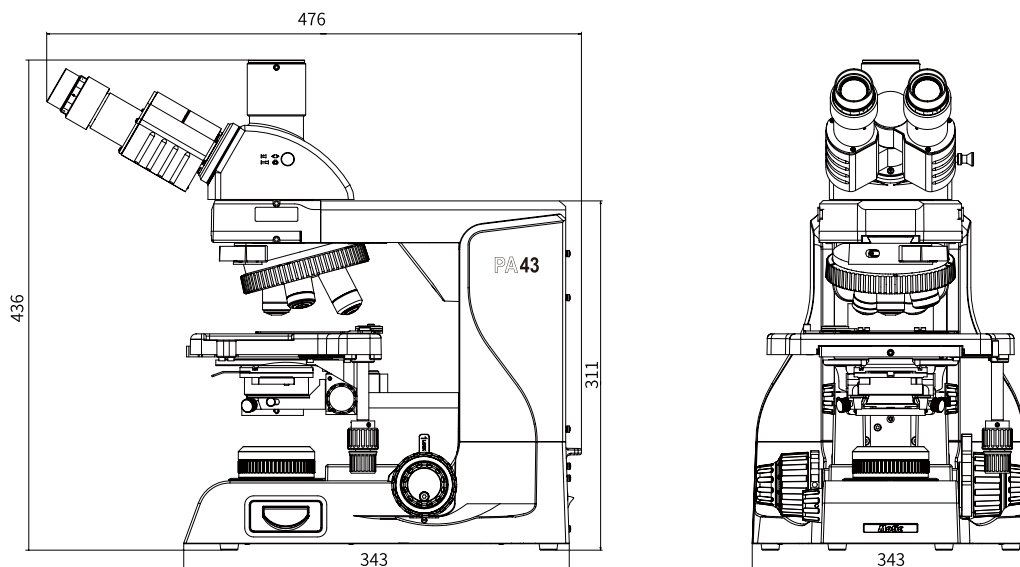
Name		Package 1 (PH)	Package 4 (PH-Turret)	Package 2 (Standard)	Package 3 (Pathology)
<b>Stand</b>		●	●	●	●
<b>Observation Tube</b>	Trinocular tube head	●	●	●	○
	Tilting trinocular tube head	○	○	○	●
<b>Eyepiece</b>	N-WF10X/22	●	●	●	●
<b>Arm</b>		●	●	●	●
<b>Revolving Nosepiece</b>	5-position nosepiece	●	●	●	●
<b>EC-H Objective</b>	CCIS EC-H Plan2X/0.05, WD=7.24	○	○	○	○
	CCIS EC-H Plan4X/0.1, WD=15.9	○	○	○	○
	CCIS EC-H Plan10X/0.25, WD=17.4	○	○	○	○
	CCIS EC-H Plan20X/0.45, WD=0.9	○	○	○	○
	CCIS EC-H Plan40X/0.65,WD=0.5	○	○	○	○
	CCIS EC-H Plan 60X/0.8, WD=0.35	○	○	○	○
	CCIS EC-H Plan100X/1.25 oil, WD=0.15	○	○	○	○
<b>EC-H Phase Objective</b>	CCIS EC-H PL Ph10X/0.25-Ph1, WD=17.4	○	○	○	○
	CCIS EC-H PL Ph20X/0.45-Ph2, WD=0.9	○	○	○	○
	CCIS EC-H PL Ph40X/0.65-Ph2, WD=0.5	○	○	○	○
	CCIS EC-H PL Ph100X/1.25oil-Ph3, WD=0.15	○	○	○	○
<b>Plan UC Objective</b>	Plan UC 2X/0.05, W.D=7.2mm	○	○	○	●
	Plan UC 4X/0.1, W.D=30.5mm	●	●	●	●
	Plan UC 10X/0.25, W.D=17.4mm	○	○	●	●
	Plan UC 20X/0.45, W.D=0.8mm	○	○	○	●
	Plan UC 40X/0.65, W.D=0.6mm	○	○	●	●
	Plan UC 60X/0.8, W.D=0.35mm	○	○	○	○
	Plan UC 100X/1.25 Oil, W.D=0.16mm	●	●	●	○
	Plan UC 100X/0.8, W.D=1.7mm	○	○	○	○
<b>Phase Contrast Objective</b>	Plan UC 10X/0.25, W.D=17.4mm	●	●	○	○
	Plan UC 20X/0.45, W.D=0.8mm	○	○	○	○
	Plan UC 40X/0.65, W.D=0.6mm	●	●	○	○
	Plan UC 100X/1.25 Oil, W.D=0.16mm	○	○	○	○
<b>Condenser</b>	N.A 0.9/1.25 Abbe condenser with slider slot	●	○	●	○
	Turret Condenser	○	●	○	○
	N.A.0.90/0.13 Swing In/Out Condenser	○	○	○	●
<b>Stage</b>	Rackless stage	●	●	●	●
<b>Transmitted Illumination</b>	Condenser (w/ field diaphragm)	●	●	●	●
<b>Illumination</b>	LED module (high color temperature)	●	●	●	●
	LED module (low color temperature)	○	○	○	○
	Halogen module	●	●	●	●



Name		Package 1 (PH)	Package 4 (PH-Turret)	Package 2 (Standard)	Package 3 (Pathology)
Adapter	0.5X	○	○	○	○
	0.65X	○	○	○	○
	1X	○	○	○	○
Phase & DF accessory	PH slider(Ph1)	●	○	○	○
	PH slider(Ph2)	○	○	○	○
	PH slider(Ph3)	○	○	○	○
	Dark field slider	○	○	○	○
	PH slider(Ph1 & Ph2)	○	○	○	○
	Phase centering telescope	●	●	○	○
Polarized accessories	Analyzer	○	○	○	○
	Polarizer	○	○	○	○
Filter	Yellow filter	○	○	○	○
	Green filter	○	○	○	○
	Didymium filter	○	○	○	○
	Blue filter	●	●	●	●
	Neutral density filter	○	○	○	○

“ ● ”Standard configuration includes, “ ○ ”Optional fittings.

## PA43 Dimensions



Some images: Courtesy to Dr. Dong GH, Department of Pathology, Beijing Tiantan Hospital, Capital Medical University.  
Professor Wang Tong, Cytogenetic/FISH laboratory, Lu Daopei hospital Group.



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