IND

Motic®

MORE THAN MICROSCOPY

Perfection and Precision

PA53 MET Series

INSPECTION MICROSCOPES FOR AN INTELLIGENT SURFACE ANALYSIS

PA53 MET Series

High Power Analysis Microscopes for Reflecting Surfaces from Industry and Material Sciences

Motic PA53 MET microscopes introduce a superior optical performance, implemented in an ergonomic hardware setup and combined with automated functions for precise quantifications.
The Motic PA53 MET Series: Ultimate solutions for industrial quality control and analysis of opaque and transparent materials.

The PA53 MET offers all features needed for material inspection

Superior Optical Performance

Newly designed Semi-Apochromatic objectives in BF (Brightfield) and DF (BF/Darkfield) versions guarantee perfect information from the sample. Motic is proud to present an Interference Contrast (DIC) concept for a careful analysis of surface defects.

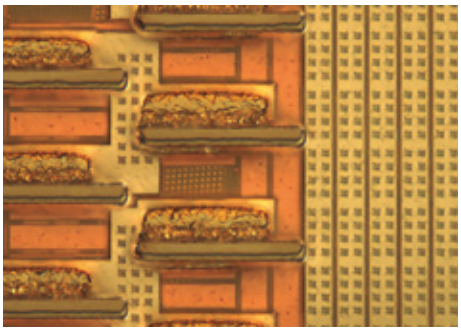
Sleek Handling

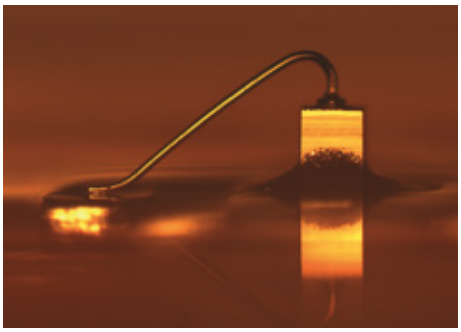
The modularity of the PA53 MET concept allows multiple solutions with a flexible degree of automation. Any configuration shows ergonomics in handling.

Modularity is Key

For any degree of automation, for any specific sample characteristics: Whether it is about purely reflective materials or compound samples with transparent parts, the PA53 MET models are ready to perform.

Interchangeable modules, mechanical or motorized, an optional microscope stand with additional transmitted light, a motorized Z-axis for a precise visualization and quantification of volumes: all this is manageable.





PA53 MET Series

High-Performance Solutions for all Material Inspections

Crisp and clear images, this is guaranteed. Reproducible measurements, that's evident. The newly designed optics guarantee the best information derived from imaging and documentation. Established contrast methods, multiple degrees of motorization in X, Y, and Z: The PA53 MET models are ready to suit your individual demands.

Flexible Contrast Methods

Incident Illumination

The incident illumination provides a variety of Contrast Methods: Brightfield and Darkfield are the standards, DIC is a powerful optional tool for the visualization of scratches or other tiny surface defects of opaque samples.

Harmonized BF/DF switch

When changing from Darkfield to Brightfield, an interlocking neutral density (ND) filter protects the operator's eyes from strong visual irritations.

Polarization

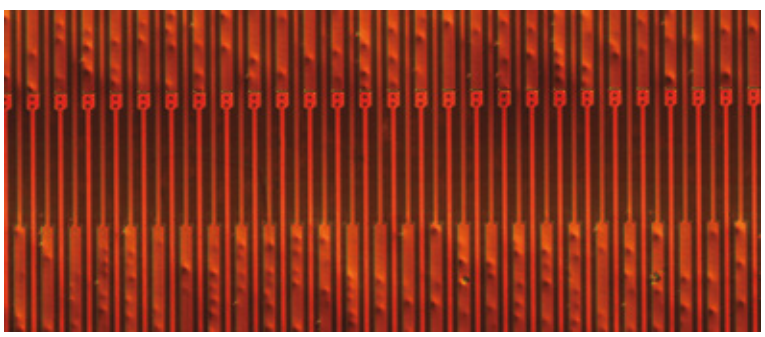
To minimize reflections and lack of contrast, a set of polarizer/analyzer will help in the case of highly reflective samples.

New for Motic: DIC for Ultimate Surface Inspection

The Motic DIC concept works with a single Nomarski DIC prism. A practicable and inexpensive solution for any magnification.

Transmitted Light

Neutral density filters with ND6 and ND25 values, together with an LB daylight filter (Halogen lamp) are built-in for perfect color fidelity if needed.



PA53 MET 3D

Quantification of Surfaces:
That is what the PA53 MET-3D is Made for.

Simple acquisition of 3D images is achievable through a motorized Z-axis. Accurate 3D measurements of simple dimensions, deeps, and volumes are provided by capturing a stack of 2D images combined with clever analysis software.

A 3-D Profiling System for Professionals

Z-Axis Profiler

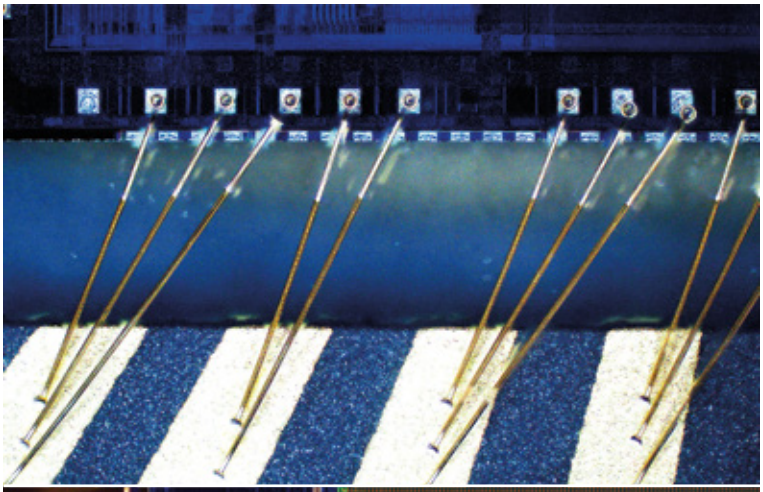
A Z-axis autofocus setup assists in acquiring 2D images, to be combined with our Motic Analysis software, for generating 3D profiles visually and for quantification purposes.

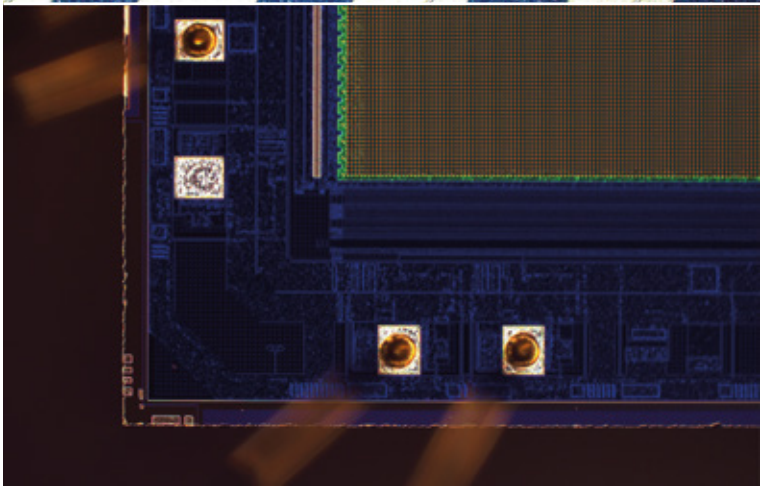
Convenient Control Pad

8-speed settings for controlling the Z-axis movement allow precise and quick focusing. An emergency stop is implemented in case of error/mal-function.

Z-axis Module Specifications

Stroke Distance	30 mm
Resolution	0.01 µm
Repeatability	0.5 µm
Max Speed	1.4 mm/s
Weight	5 kg
Dimensions	W:240 mm
	D:157 mm
	H:202.5 mm
Load capacity	15 kg





PA53 MET Series

Perfect Optical Performance Provided by Semi-Apo Objectives

You are invited to experience excellent optical performance with High-Resolution objectives, opening a world of surprising details. Brightfield, Darkfield, and DIC, all standard operation methods in Material Sciences are performed with excellence.

Superior Resolution
Increased resolution power with every magnification step – best detail information for precise visualization and documentation with digital tools.

Adjustable Eyepieces
PA53 MET eyepieces deliver a 25mm Field of View. This is ahead of any standard, 56% wider view at a glance in comparison with a 20mm FOV. The use of reticles is no problem: after focusing on the sample the respective eyepiece can be adjusted for the scaling.

Simple measurements or complex analysis, our PA53 MET models are ready for execution

Digital Technology at its Best

Multi-Function Control Knob

Incident/Transmitted illumination, brightness, ON/OFF, and even Z-Axis position can be easily checked at a glance. Efficiency and effectiveness are ensured.

ECO Function

A power-saving mode is engaged whenever an operator leaves temporarily.

Brightness Correction

When rotating the nosepiece, the former brightness setup for each objective position is reactivated. Any new adjustment will overrule the previous setting.

Convenient, Automated Magnification Display

Current working magnification is displayed automatically and the auto-calibrated value is measured through our advanced Motic Analysis software.

PA53 MET

Full Automation for Increased Speed

What can be automatted additionally? The nosepiece, the X/Y stage, even the Z-axis. A full control over all 3 dimensions is possible.

A Motorized Revolving Nosepiece

The motorized nosepiece increases the speed of your workflow making the PA53 MET more convenient for your workflow.

Motorized Stage with Image Stitching Capabilities

Auto-Tiling Function: Acquires a set of images in a consecutive order and automatically stitches them in real time.

Fluorescence Observation

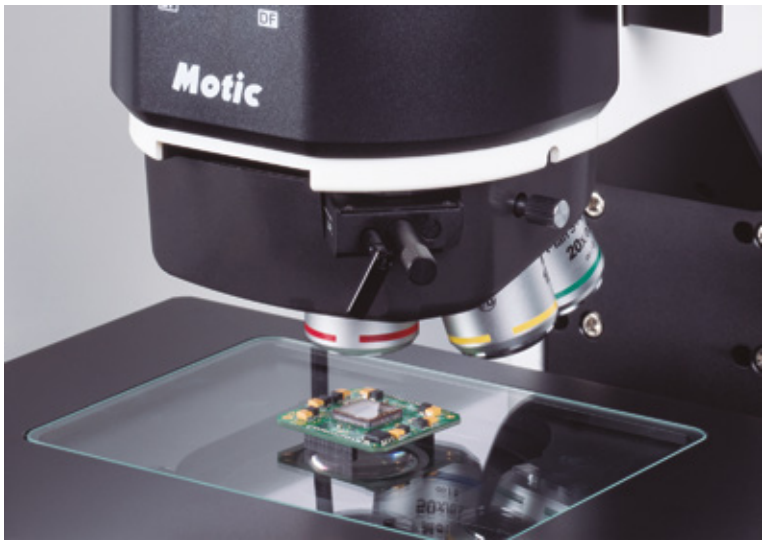
The PA53 MET even supports Fluorescence. A useful feature when photoresist residues or organic particles have to be detected.

Incident and Transmitted Illumination

The PA53 MET may feature incident and transmitted light illumination, depending on the stand type.

Anti-Vibration Table

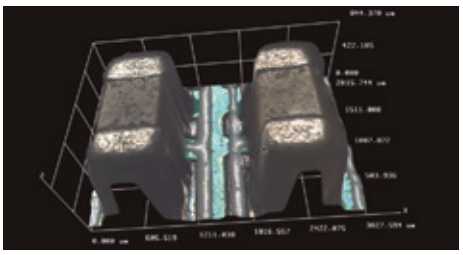
The PA53 MET can be installed stably in any environment. A high-quality Anti-Vibration Isolation Frame prevents distorted images during visual observation or imaging.



Motic Analysis Software: Powerful Measurement Tools

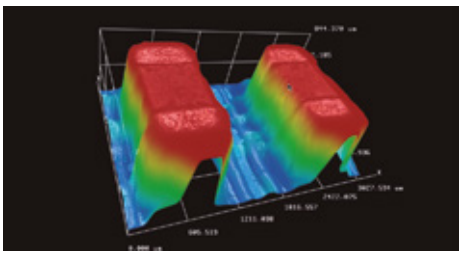
Motic Analysis

All Motic software tools are optimized to work intuitively and smoothly with the PA53 MET hardware. For both inspection and research work in 2D and 3D, a powertful package can be supplied.



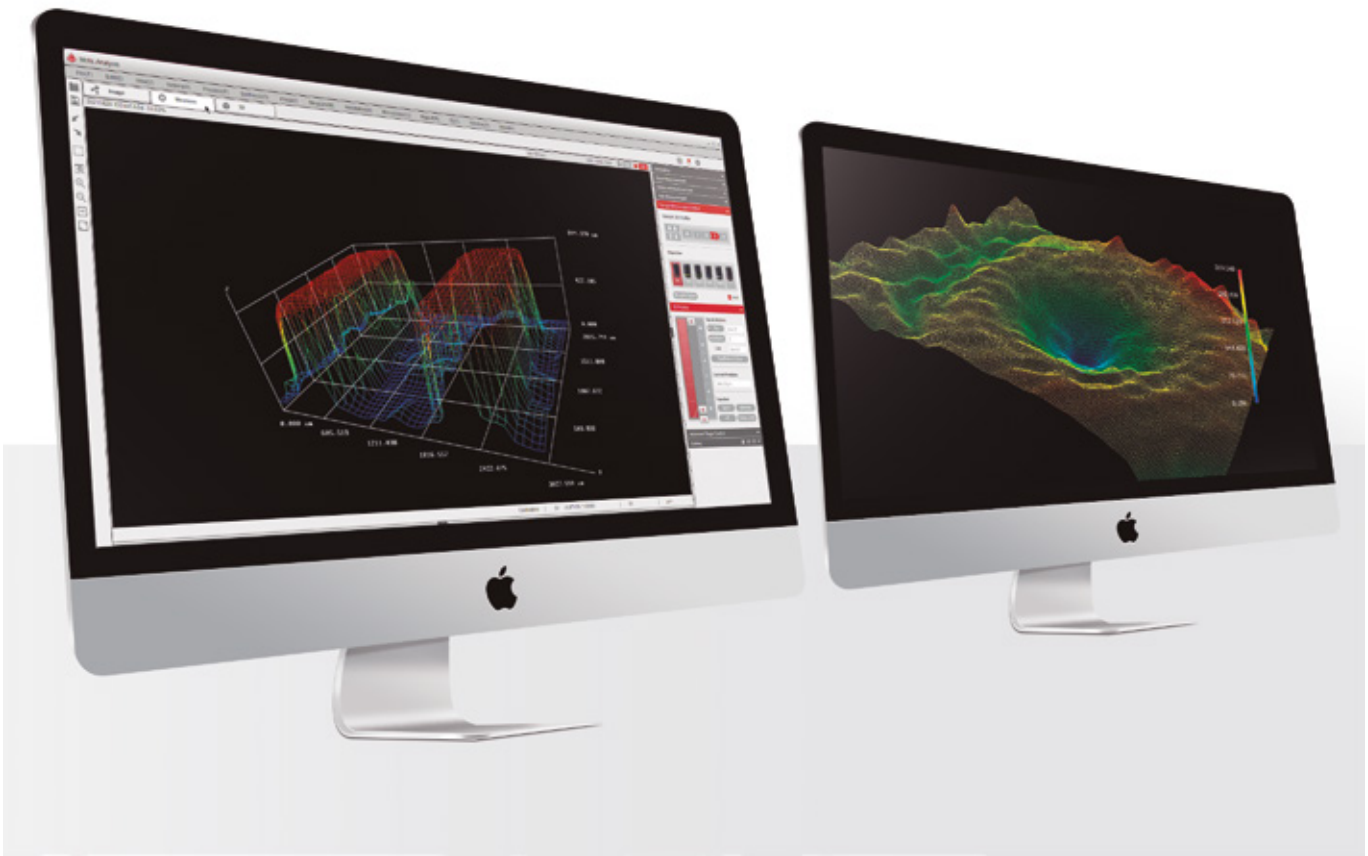
Realistic Live Tiling

With a motorized live tiling function, it may be useful to obtain a panorama image while moving the X/Y stage.



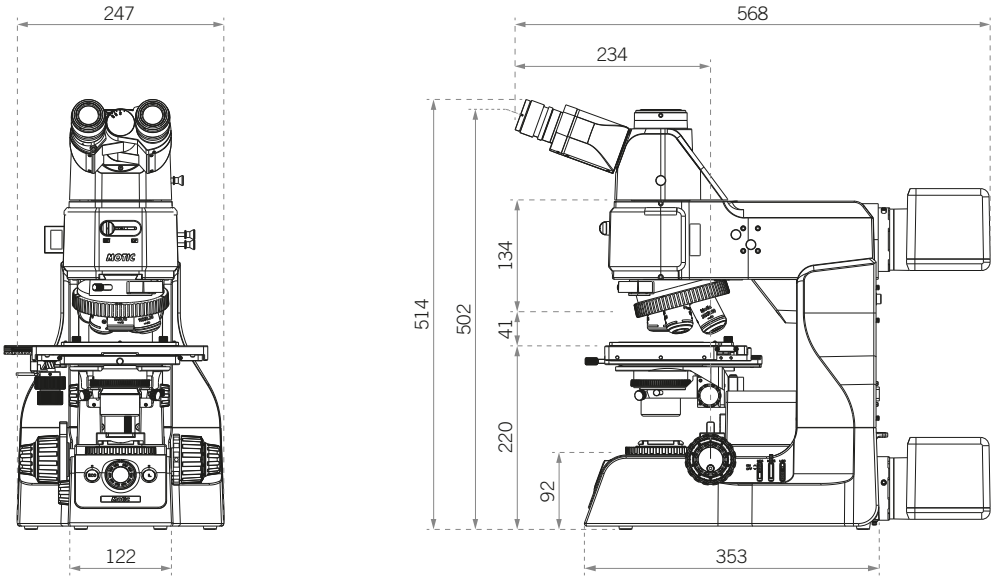
Professional Moticam S Series Cameras

All of our high-quality Moticam S Series cameras are compatible with the PA53 MET microscopes and are designed for diverse demands in terms of resolution, color fidelity and speed.

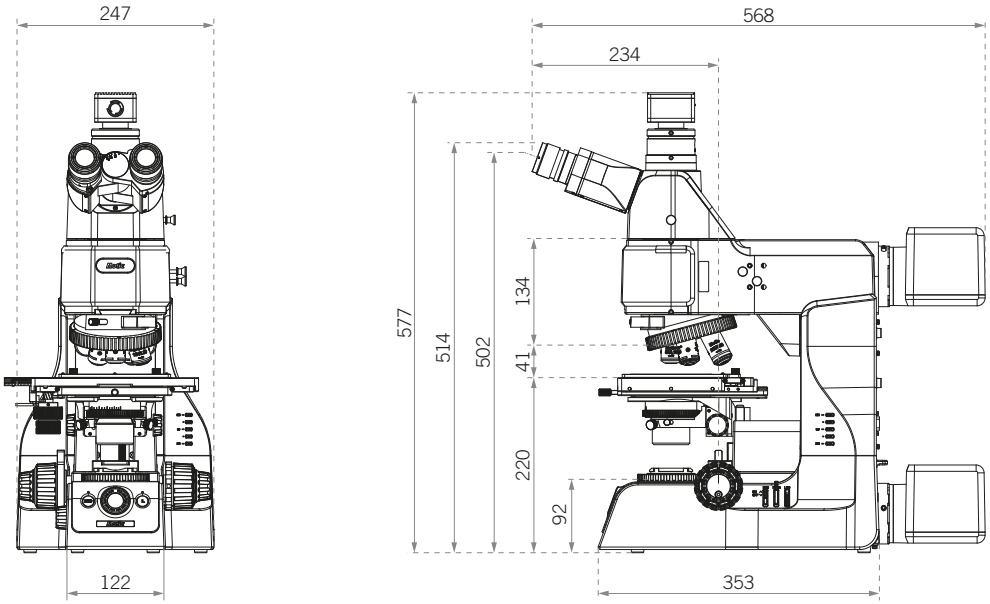


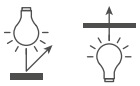
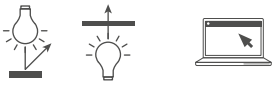
PA53 MET Series Dimensions & Technical Specifications

PA53 MET-BD / PA53 MET-BD-T



PA53 MET-BD-T 3D



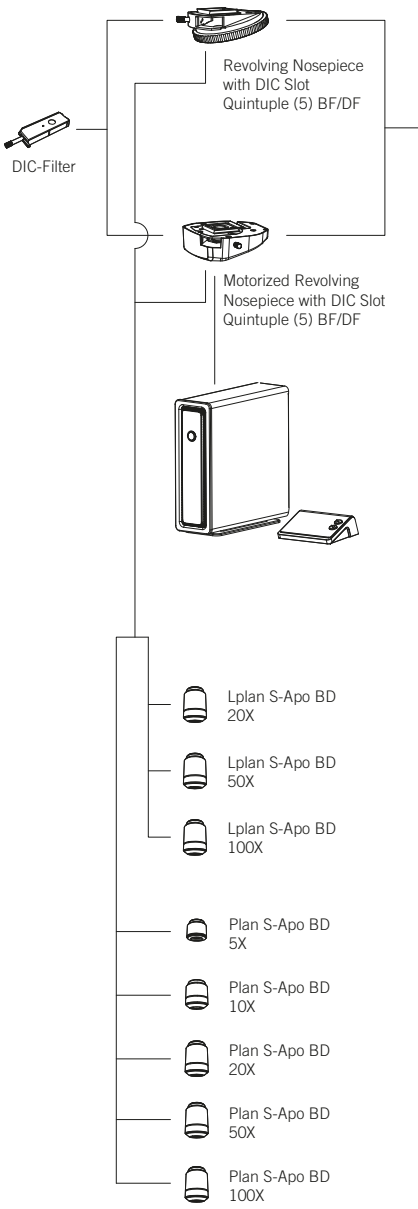
●	**SKU**	1100104600884	1100104600894	1100104600961
●	**Name**	**PA53MET-BD**	**PA53MET-BD-T**	**PA53MET-BD-T-3D**
	Optical system	Colour Corrected Infinity Optical System (CCIS®)		
	Observation tube	Trinocular head, Siedentopf type		
●	**Sensor type & size**	-		sCMOS // 1/1.8"
●	**Capture resolution**	-		6MP
●	**Live display mode through USB**	-		3072x2048, 1536x1024 pixels
●	**Scan & shutter mode**	-		Progressive // Rolling shutter
●	**Data transfer**	-		USB 3.1
	Inclination	20° inclined		
	Trinocular light split	100:0/0:100 erect image		
	Interpupillary distance	50-75mm		
	Diopter adjustment	On both eyepieces, +/- 4 diopter		
	Eyepieces	Widefield WF10X/25mm with diopter adjustment		
●	**Intermediate body**	Epi-illuminator Quartz Halogen 100W with integrated field and aperture diaphragms, slots for filters, filters ND6, LBD and BF/DF module		
	Nosepiece	Reversed quintuple, coded for brightfield and darkfield objectives with DIC slot		
	Objective classification	CCIS® Plan S-Apochromatic BD		
	Objectives	5X/0.15 (WD 20mm), 10X/0.3 (WD 12mm), 20X/0.45 (WD 3mm), 50X/0.8 (WD 1mm)		
	Objective mounting thread	M26X0.706		
	Stand type	Upright		Upright. 3D profiling system with motorized Z-axis. 30mm stroke
	Stage	Mechanical stage with built-in low position rackless coaxial stage control and sample holder		
	Stage size	210x170mm		
	Travel range X&Y	104x102mm (4"x4")		
●	**Condenser**	-	Focusable and centerable LWD condenser N.A. 0.65	
●	**Diaphragm**	-	Iris diaphragm	
	Focus mechanism	Coaxial coarse and fine focusing system with tension adjustment		
	Fine focus precision	1µm		
	Focusing stroke	29.5mm		
	Upper limit stop	Upper limit stop preset but adjustable		
●	**Filter & Filter holder**	-	Integrated filters ND6, ND25, LBD	
●	**Incident illumination**	Köhler Halogen 12V/100W for BF, DF, DIC, POL		Köhler Halogen 12V/100W for BF,DF,DIC,POL,3D profile module
●	**Transmitted illumination**	-	Köhler Quartz Halogen 12V/100W with intensity control	
	Illumination features	Power saving mode ECO function, LED voltage indicator and Intelligent Light function		
●	**Software**	-		Analysis Professional
	Transformer	Internal		
	Power supply	110-240V (CE)		
●	**Accessories included**	-		C-mount camera adapter
	Dimensions LxWxH	572x246x514		
	Net weight	19Kg		
	CONTRAST TECHNIQUES			
	Brightfield	Brightfield		
	Polarization	Optional sliders reflected		
	Darkfield	Integrated		
	DIC Nomarski	Optional slider reflected		

PA53 MET Series Motic Analysis Software Comparison

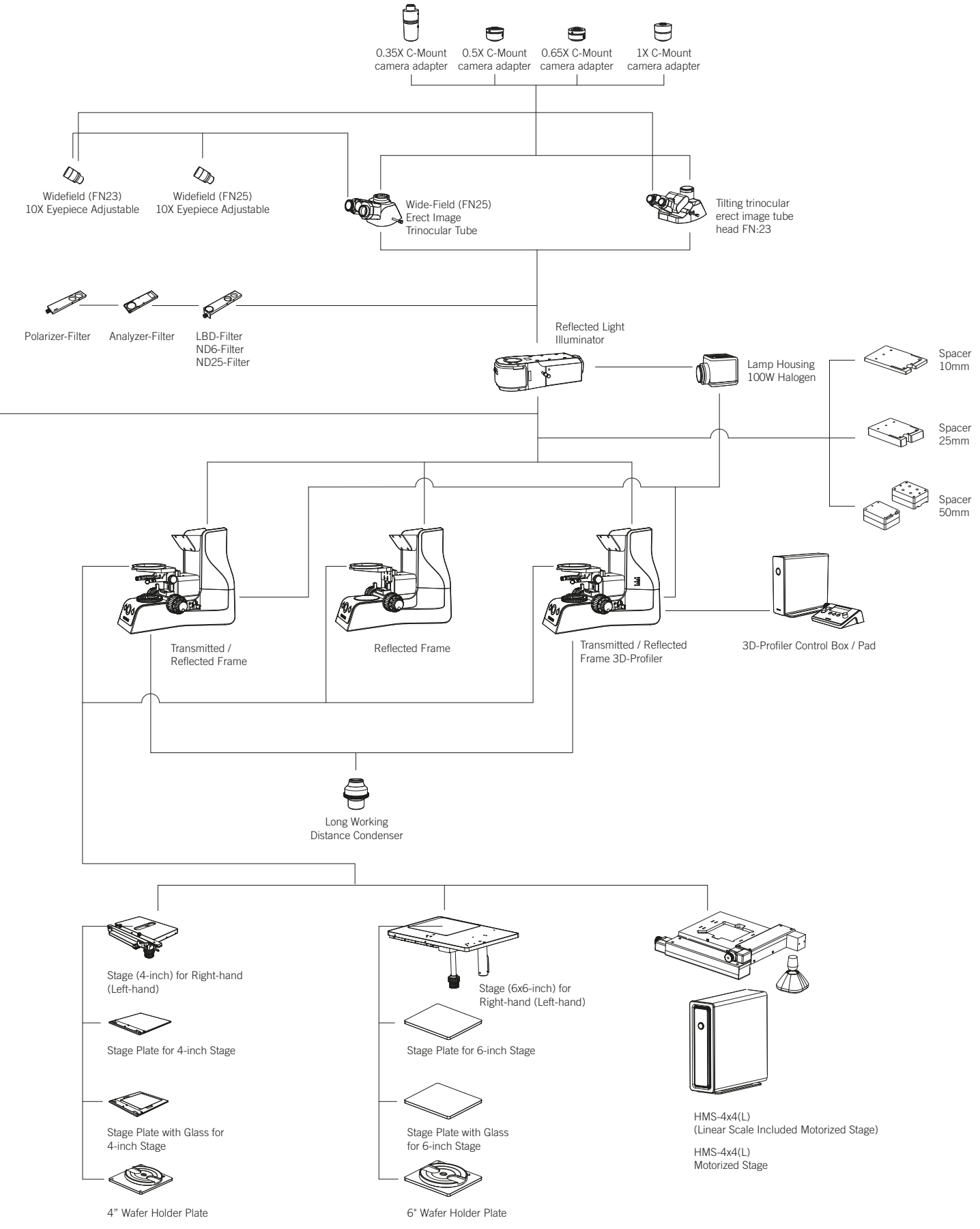
	Function	Basic	Standard	Professional
Image Acquisition	Capturing (Snap)	•	•	•
	Video Recording	•	•	•
	HDR	•	•	•
	Manual Tiling	•	•	•
	Manual Multi-Focus	•	•	•
	Live Multi-Focus		•	•
	Time Lapse		•	•
	Live Tiling		•	•
	Automatic Tiling			•
	EDF			•
Image Analysis & Measurement	Basic 2D Measurement Tools	•	•	•
	Report Creation (Excel & CSV)	•	•	•
	2D Live Measurement	•	•	•
	2D Combination Measurement	•	•	•
	Cross hair, Scale bar, info stamp display	•	•	•
	Image Processing Tools	•	•	•
	Data Collector	•	•	•
	Annotations	•	•	•
	Advanced 2D Measurement Tools		•	•
	Line Profiling		•	•
	Histogram		•	•
	Digital Reticle/Grid		•	•
	Auto Count			•
	Auto Measurement			•
	Auto Segmentation (Threshold)			•
3D Profiling*	3D Measurement			•
	3D Scanning			•
	Auto Focus			•
	Auto Smoothing			•
	Auto Height Measurement			•
	Level Correction			•
Device Control**	AMS	•	•	•
	IL	•	•	•
	ECO	•	•	•
	Motorized stage Control		•	•
	Motorized Nosepiece		•	•
	Z-Axis Control			•

Requires motorized Z-axis

***Some functions device and configuration specific*



System Overview



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