



IND

BA310MET SERIES

ADVANCED MICROSCOPES FOR MATERIAL SCIENCES



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Motic's new BA310MET series presents an affordable and powerful microscope line for incident light applications in all material sciences. Industrial quality control of opaque samples can be performed as well as teaching in educational environments of engineering and material professions, where affordability and ease of use are key demands.

Extended flexibility is given by the BA310MET-T models with built-in transmitted light for transparent or compound materials. The BA310MET-H includes a more flexible focusing device, dedicated to larger samples with only little limitation in size.

Motic's new LM Plan-Achromatic objectives with Long-Working Distance for incident light provide optimal image contrast for reflective, non-covered specimen. Together with a fully corrected tube lens an intermediate image without colored fringes is created.

In all models the Epi-Illuminator offers a powerful 50W Halogen light source. The built-in field diaphragm and aperture diaphragm help to optimize image quality by reducing stray light and thus increasing contrast.

As a standard, an anti-fungus treatment has been applied to the complete microscope to ensure a long lifetime in humid environments.



Your Motic Team

BA310MET

ADVANCED MICROSCOPES FOR MATERIAL SCIENCES



THE MECHANICS

STAND & STAGE | EYEPIECE TUBES



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GREAT FLEXIBILITY FOR ALL SAMPLE SIZES

The BA310MET series displays two different microscope designs. BA310MET and BA310MET-T are based on a regular upright microscope with fixed nosepiece and movable stage, while in BA310MET-H the Epi-Illuminator including optics is combined with a focusing block mounted on a vertical pole. Thus an extended focusing range for the examination of bulky samples is achieved.

Different sample dimensions require different stage sizes: the BA310MET models carry a variety of stages with a minimum travel range of 75x50mm. All models with integrated transmitted light come equipped with a glass stage insert and slide holder together with an LWD condenser.

The BA310MET observation tubes guarantee hours of fatigue free viewing. The Trinocular tubes allow a simultaneous observation through eyepieces and on screen respectively. On demand, a Trinocular tube with erect image and fixed 50/50 light split can be supplied.

Each BA310MET model carries a ball bearing 5-fold nosepiece with reversed orientation and precise parcentration and repeatability with every magnification change.

BA310MET-H



WAFER HOLDER | BA310MET-T 6x4*



SLIDEGLASS HOLDER | BA310MET-T 3x2



THE OPTICS

OBJECTIVES | EYEPIECES



- INTRODUCTION
- THE MECHANICS
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- THE ILLUMINATION
- DOCUMENTATION
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NEW LM PLAN ACHROMATS FOR INCIDENT LIGHT

For best optical performance of the BA310MET series, Motic introduces a new generation of LM Plan-Achromatic objectives dedicated to non-covered specimen. Made of high quality glass, these LWD objectives follow the successful Motic CCIS® optical concept and ensure improved contrast and image quality by multi-layer coating. The tube lens provides a fully corrected intermediate image, accessible by the photo port of a Trinocular head. For advanced resolution requests, two special EC-M Plan-Achromatic objectives are available.

The standard eyepieces N-WF 10X/20 with high eyepoint for eyeglass wearers provide consistent diopter adjustment for both eyes. This enables perfect usage of reticles for measuring purposes.



THE ILLUMINATION

LIGHT SOURCES | INCIDENT AND TRANSMITTED LIGHT



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FLEXIBILITY FOR COMPOUND MATERIALS

The Epi-Illuminator of the BA310MET models is based on a 50W Halogen light source with external power supply. With an adjustable field and aperture diaphragm, homogenous illumination and improved contrast are guaranteed. The simple polarization set enables a useful “POL contrast” and helps to minimize reflections especially in low power objectives.

The BA310MET-T stands offer an integrated 30W transmitted light option and Field diaphragm for Koehler setup. A replacement of the Halogen bulb by LED modules of different color temperatures is possible. To ensure the best possible illumination quality, a new LWD condenser is an integral part of this new microscope. As both transmitted and incident illumination are supplied by separate power units, a “mixed” illumination for compound materials can easily be performed.

BA310MET-T

BA310MET



DOCUMENTATION

STANDARD PHOTOMICROGRAPHY | DIGITAL DOCUMENTATION





FLEXIBLE DOCUMENTATION OPTIONS

Today, accurate documentation has been established as an important part in natural sciences and industrial quality control. The new BA310MET models offer a choice of different imaging options.

The traditional use of a single lens reflex camera requires a Trinocular version of the BA310MET. The adaptation of the camera consists of a mechanical adapter combined with a photo eyepiece. The necessary T2 adapter specifically fits to the camera model and is supplied by photo specialist shop. This setup delivers high resolution images of small fields.

The Moticam series of digital c-mount cameras delivers excellent live images, ready for presentations and further storage. All Motic cameras come equipped with proprietary software to transform the BA310MET into an analysis and documentation station. For limited top landing bench, Moticam HD cameras are ideal for the presentation of High Resolution images on an HDMI screen without computer. The wireless models Moticam X and X2 are dedicated to run under tablet and smartphone control through our “MotiConnect” App. Our tablet cameras with touch screen in first instance work as a fixed monitor solution, but may also create a hotspot for remote tablet/smartphone access.



SPECIFICATIONS

BA310MET COMPARISON TABLE



BA310MET



BA310MET-T



BA310MET-H

	BA310MET	BA310MET-T	BA310MET-H
Optical system			
Color Corrected Infinity System CCIS®	●	●	●
Observation system			
Swiveling 360° with 30° inclination	●	●	● binocular
30° inclination			● trinocular
Interpupillary distance			
48-75 mm	●	●	● binocular
55-75 mm			● trinocular
Eyepieces			
Standard Eyepieces N-WF 10X/20	●	●	●
Optional Eyepieces N-WF 15X/16	●	●	●
Optional Eyepieces N-WF 10X/22	●	●	
Diopter adjustment			
+/- 5 dpt	●	●	●
Reticles (25mm)			
Crosshair	●	●	●
10mm/100 divisions	●	●	●
Crossed double scale 10mm/100 divisions	●	●	●
Trino light split			
100:0/20:80	●	●	
50/50 fixed			●
Nosepiece			
Reversed quintuple	●	●	●
Objective mounting thread			
RMS (W 4/5" X 1/36")	●	●	●
LM Plan Achromat objectives			
Standard set 5X/0.13; 10X/0.3; 20X/0.4; 50X/0.55	●	●	●
Optional: LM Plan 100X/0.8; High NA EC-M PL 20X/0.45; 50X/0.75	●	●	●
Stage			
Built-in coaxial mechanical stage	●	●	●
Stage size			
180 x 140 mm	●		●
240 x 140 mm (3x2")		●	
300 x 180 mm (6x4")		●	



BA310MET



BA310MET-T



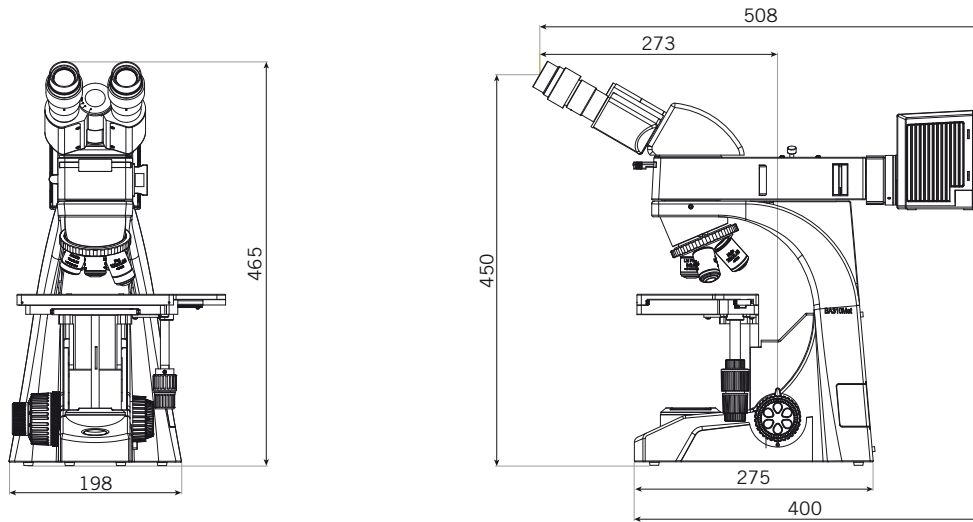
BA310MET-H

X/Y travel range			
75 x 50mm	●	●	
150 x 100mm		●	
100 x 80mm			●
Focus			
Brass gears; Z-axis movement 30mm; coaxial with tension adjustment	●	●	●
Fine focus precision			
2 μm	●	●	●
Maximum sample height			
30 mm	●	●	
120 mm			●
Illumination			
Incident illumination 12V/50W	●	●	●
Halogen / LED interchangeability (incident light)	●	●	●
12V/3W LED with 4500/6000K			
Transmitted light 6V/30W		●	
Halogen / LED interchangeability (transmitted light)		●	
6V/3W LED with 4500/6000K			
Condenser			
LWD condenser NA 0.85		●	
Transformer for incident light			
External	●	●	●
Filter			
32mm Blue, Green, Yellow, Frosted (for incident light)	●	●	●
45mm Blue (for transmitted light)		●	
Contrast techniques			
Brightfield	●	●	●
Darkfield			
DIC			
POL contrast	●	● incident & transmitted	●

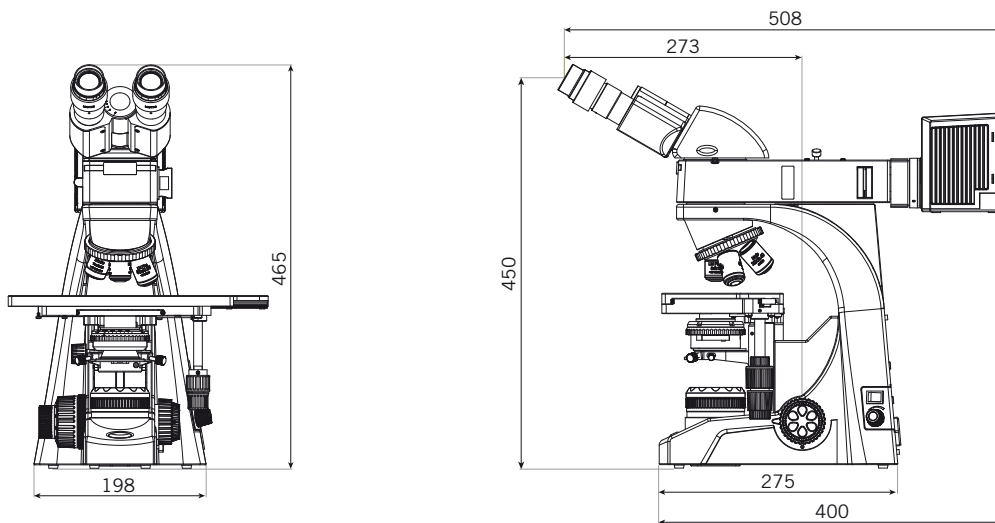
SPECIFICATIONS

BA310MET SCHEMATIC DIAGRAMS (units: mm)

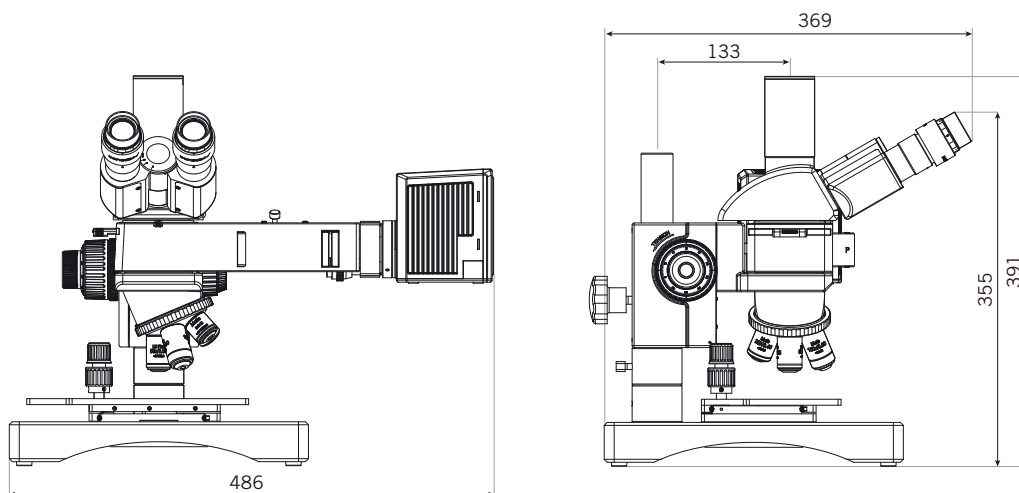
BA310MET



BA310MET-T

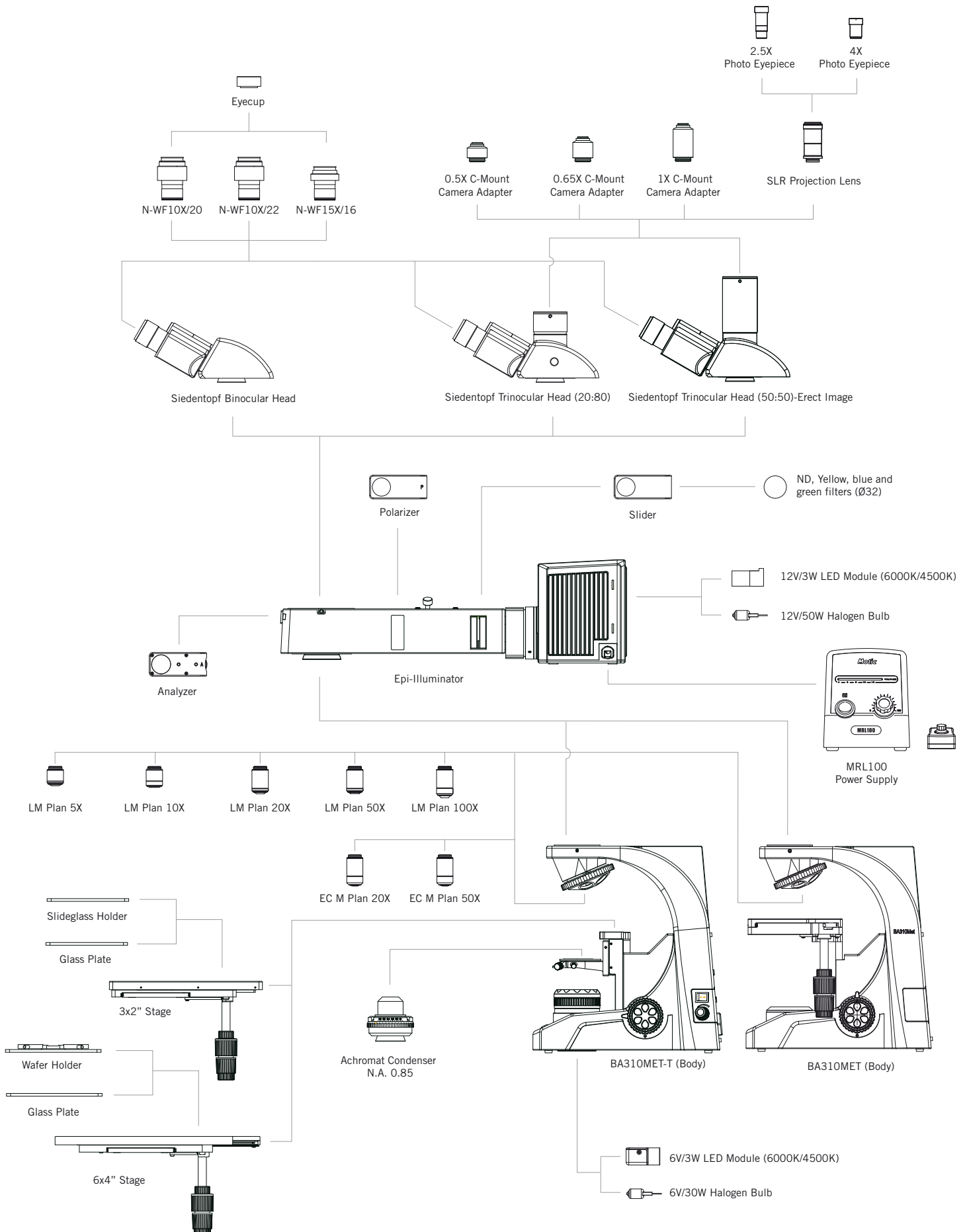


BA310MET-H



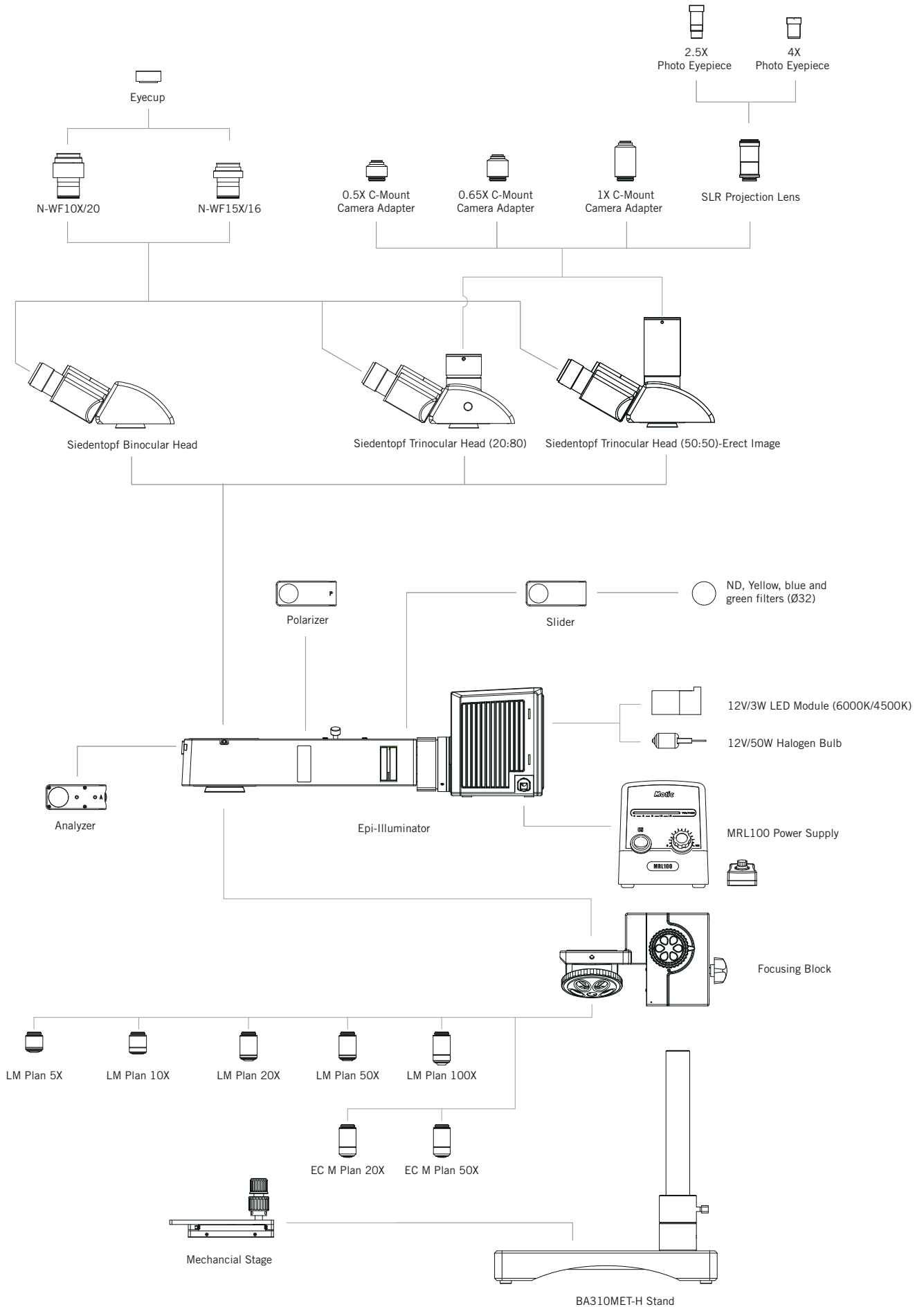
SPECIFICATIONS

BA310MET & BA310MET-T | SYSTEM DIAGRAM



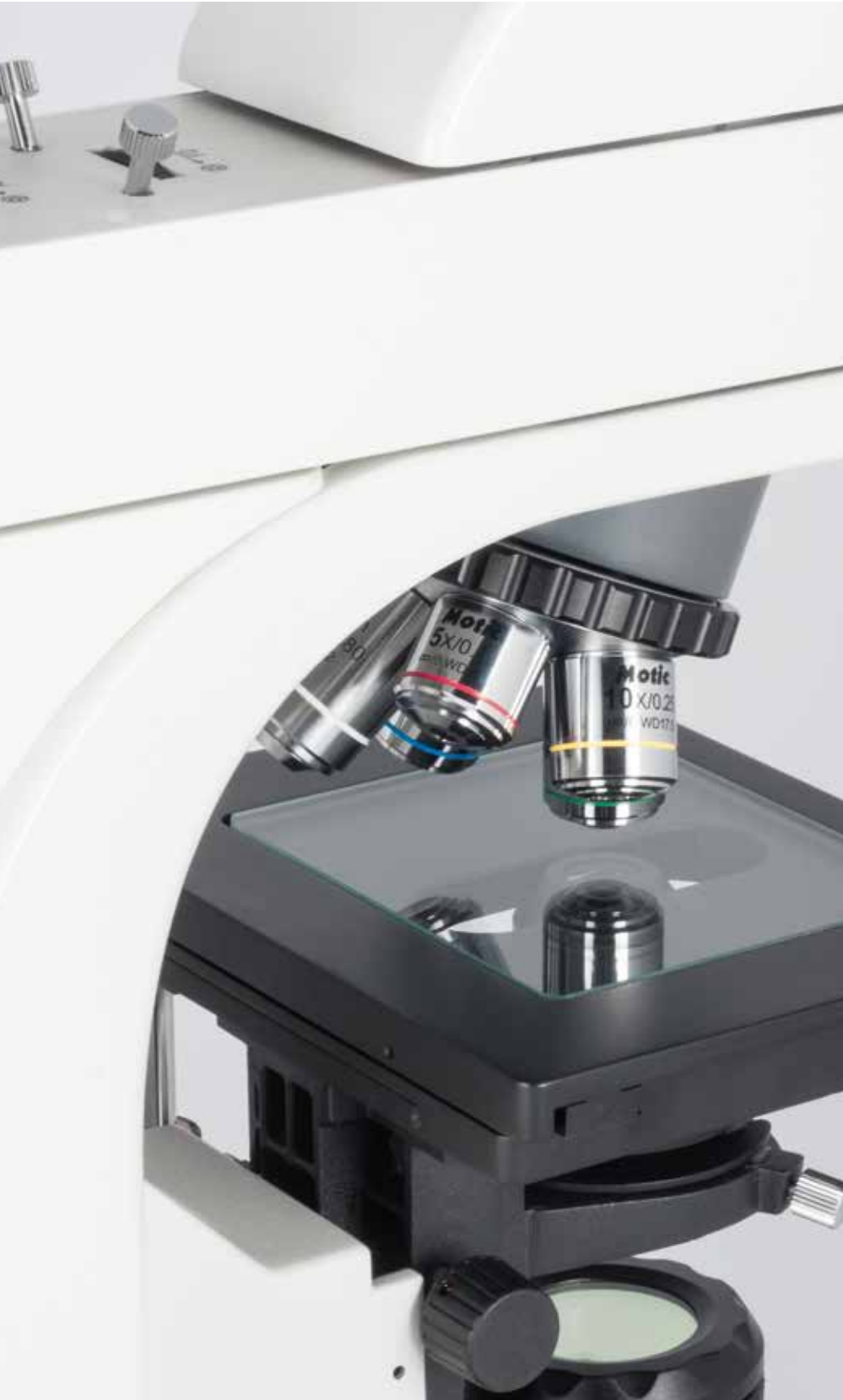
SPECIFICATIONS

BA310MET-H | SYSTEM DIAGRAM



HIGHLIGHTS

ILLUMINATION | OBJECTIVES | MODELS



ILLUMINATION

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The BA310MET-T stands offer an integrated 30W transmitted light option and Field diaphragm for Koehler setup.

OBJECTIVES

For best optical performance, Motic introduces a new generation of LM Plan-Achromatic objectives dedicated to non-covered specimen. Made of high quality glass, these LWD objectives ensure improved contrast and image quality by multi-layer coating.

For advanced resolution requests, two special EC-M Plan-Achromatic objectives are available.

MODELS

BA310MET

Based on a regular upright microscope with fixed nosepiece and movable stage.

BA310MET-T

With integrated transmitted light, equipped with a glass stage insert and LWD condenser. 3X2" and 6x4" stages available.

BA310MET-H

The Epi-Illuminator including optics is combined with a focusing block mounted on a vertical pole. Thus an extended focusing range for the examination of bulky samples is achieved.

Motic®

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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.

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