

**Motic®**

MORE THAN MICROSCOPY



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 Europe Team*

# BA310MET

ADVANCED MICROSCOPES FOR MATERIAL SCIENCES



# THE MECHANICS

STAND & STAGE | EYEPIECE TUBES



INTRODUCTION  
 THE MECHANICS  
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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



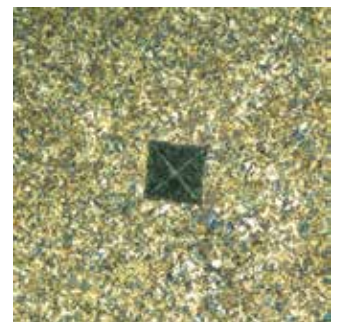
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## NEW LM PLAN ACHROMATS FOR INCIDENT LIGHT

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



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



BA310MET

BA310MET-T

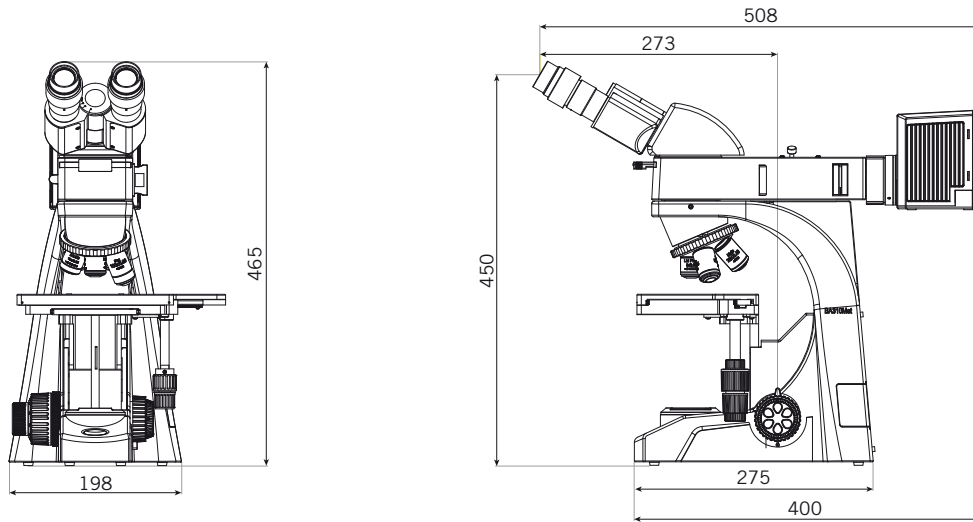
BA310MET-H

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

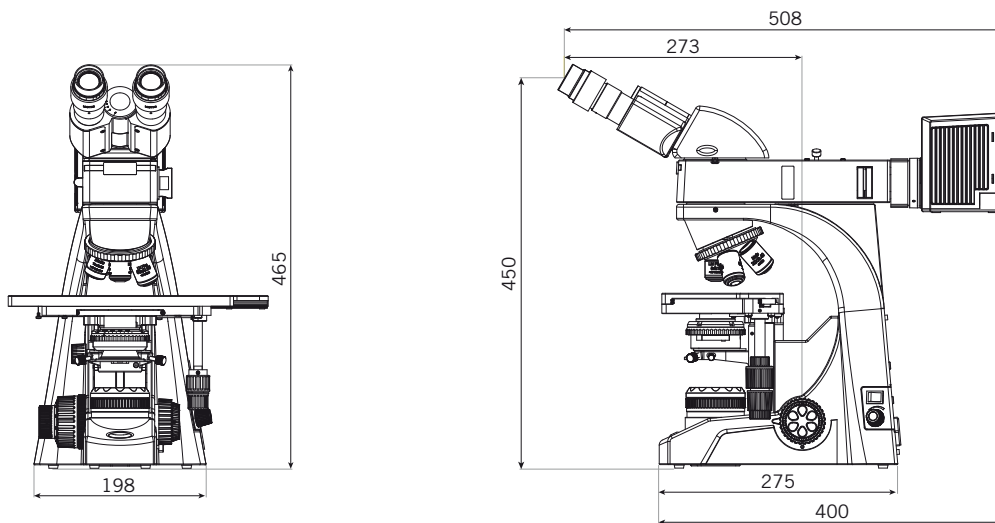
# SPECIFICATIONS

## BA310MET SCHEMATIC DIAGRAMS (units: mm)

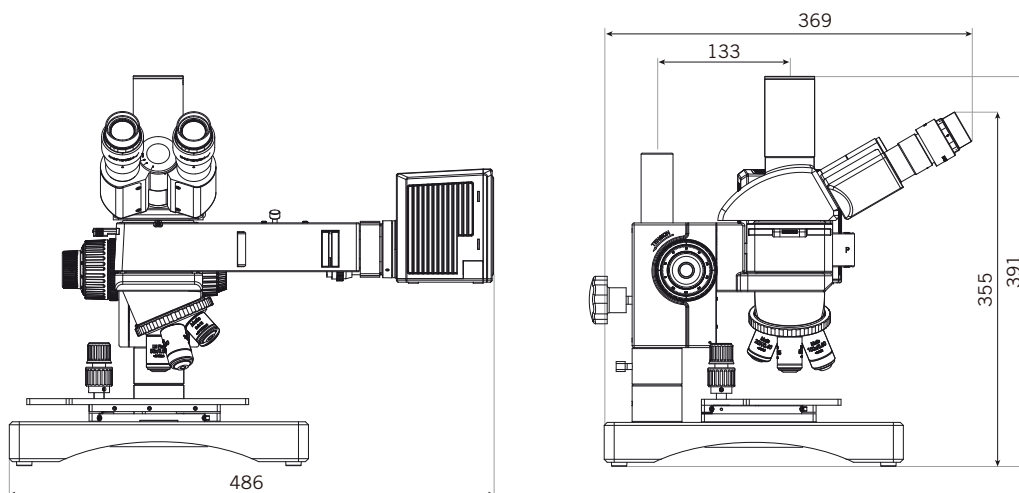
### BA310MET



### BA310MET-T

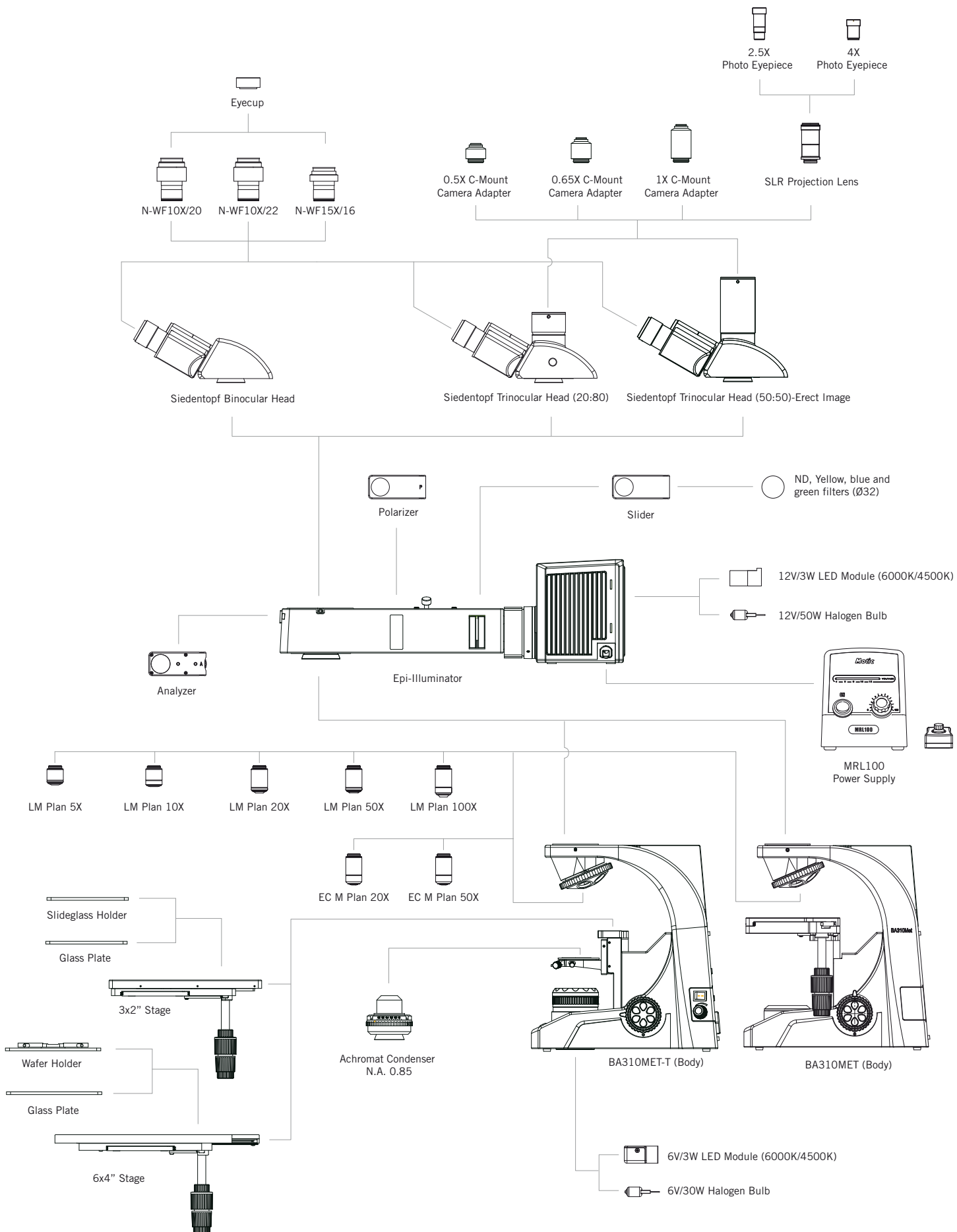


### BA310MET-H



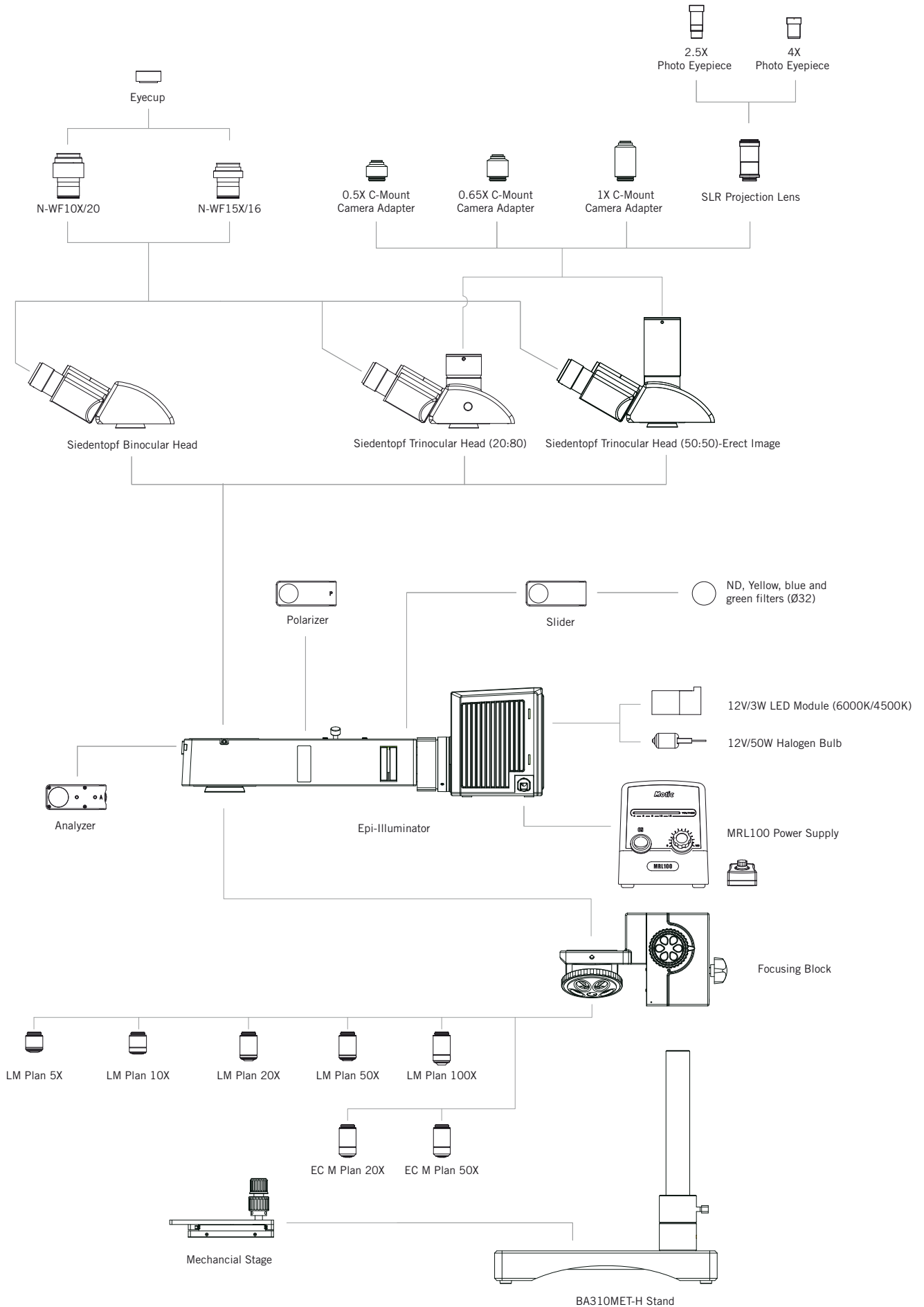
# SPECIFICATIONS

## BA310MET & BA310MET-T | SYSTEM DIAGRAM



# SPECIFICATIONS

## BA310MET-H | SYSTEM DIAGRAM





# HIGHLIGHTS

ILLUMINATION | OBJECTIVES | MODELS



## ILLUMINATION

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 increasing contrast.

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.



Canada | USA | Europe | China



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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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