

**Motic®**

MORE THAN MICROSCOPY



RESEARCH MICROSCOPE PLATFORM



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The BA410 Elite is Motic's brand new approach for a professional research microscope with best image quality options. Universities and laboratories with applications in hematology, cytology and histology will look for this flexible microscope platform with a superb performance in optics and mechanics.

Following Motic's CCIS® Infinity concept, the new Plan Apochromatic objectives may be chosen to get maximum image fidelity. Expanded resolution power in terms of numerical aperture and a stunning color reproduction allow a most reliable sample evaluation in all biomedical environments. The established EC-H Plan Achromatic bright field objectives are integral part of the standard configurations, while Phase contrast is feasible with positive and negative Phase lenses.

The rackless stage without prominent gear rack allows a safe and fast throughput of slides. A ceramic stage insertion withstands abrasion during a long lifetime.

The complete BA410E microscope is manufactured in accordance with European RoHS standards to avoid contact with lead-containing materials. An anti-fungus treatment is applied to all parts of the microscope in order to protect the system in humid environments.

*Your Motic Team*



# BA410E

RESEARCH MICROSCOPE PLATFORM



# THE MECHANICS

RACKLESS STAGE | EYEPIECE TUBES





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**THE MECHANICS**

THE OPTICS

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## SMART FUNCTIONALITY WITH ERGONOMIC IMPACT

Motic's BA410E displays maximum functionality and ergonomics in all mechanical aspects. Elegant and robust, the microscope stand follows all needs for an intense daily use.

The BA410E standard eyepiece tubes guarantee fatigue-free viewing in terms of viewing angle and improved interpupillary distance, while the "butterfly" movement may increase the viewing height by 60mm for individual positioning.

The rackless stage with its extended travel range enables a fast screening of 2 slides simultaneously, and the ceramic stage insert gives best resistance to mechanical abrasion. The minimum of 1 micron in z-movement allows ultra-smooth focusing of samples under high magnifications.



EYEPIECE TUBES | "Butterfly" movement



# THE OPTICS

OBJECTIVES | EYEPIECES



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## NEW PLAN APOS FOR NEW INSIGHTS

The Plan Apochromatic correction is the paramount of microscope objective construction. Flatness and color fidelity of the image is driven to the maximum, while expanded numerical apertures reveal new details of the sample. Chromatic and spherical aberrations are minimized for high definition images with true color reproduction.

Within the BA410E, Motic's CCIS® Infinity concept presents this apochromatic level of performance in a complete set of optional bright field objectives, compatible to all BA series models of upright microscopes. Highest quality demands from pathology, histology and hematology can now be satisfied for a reliable diagnosis in routine and research work of hospitals and other biomedical labs.

All significant optical components cooperate for a perfect image: condenser, objectives, tube lens and eyepieces. Since the intermediate image is already fully corrected, no colored fringes will affect professional digital results. A new LWD condenser allows the use of on-stage devices like counting and heating chambers without losing the full Koehler setup.





# THE ILLUMINATION

LIGHT SOURCES





## A CLEVER AND POWERFUL LIGHT MANAGEMENT

To utilize the potentials of Motic's new developments, the optical concept has to take care about power and quality of illumination. A 50 Watt Halogen light source is standard in BA410E.

BA410E also supports the LED illumination by a simple replacement of the Halogen bulb by a small LED module.



FILTER HOUSING



# THE ACCESSORIES

CONTRAST METHODS | MULTI-VIEWING DEVICES





## NEW TECHNOLOGIES AND WELL-KNOWN TRADITION

Besides the standard packages, the BA410E series offers a variety of optional accessories. Maximum flexibility is given by a Phase turret condenser with all necessary illumination rings, including a darkfield ring, and of course, a respective brightfield position.

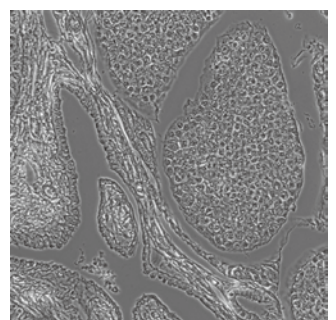
Maximum simplicity is offered for the POL contrast. The BA410E setup consists of a polarizer, placed on top of the collector lens, and the rotatable analyzer, pushed into a slot on the front of the microscope stand. A second slot may be used for semi-quantitative analysis with an available First Order Red compensator.

To share the complete visual information, the BA410E series offers multi-viewing devices. Depending on the teaching situation, a face-to-face setup is possible as well as a side-by-side installation. Maximum information can be transferred from teacher to student. A built-in LED pointer helps to emphasize regions of interest. A maximum of 4 additional student positions is possible, while the teacher microscope stand gives plenty of illumination power also for light consuming contrast methods.

TURRET CONDENSER



PH OBJECTIVES





# THE ACCESSORIES

CONTRAST METHODS | FLUORESCENCE



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## CLASSIC FLUORESCENCE

The BA410 Elite concept allows an easy upgrade to an EPI-Fluorescence microscope by using the established 100W mercury technology, giving maximum freedom in choosing a suitable filter combination. A complete range of filter cubes is available, covering all routine applications from UV up to NIR excitation. Equipped with band pass barrier filters, multi color applications can also be performed. An overview of Motic's standard filters is available by our Fluorescence brochure.

Besides the established filter combinations individual settings are feasible by using an empty filter housing, equipped with a selected choice of exciter, dichroic and barrier filter. Depending on the desired number of filter cubes the user may choose between a 4-position slider mechanism and a 6-fold turret carrier. Both illuminators are mounted between microscope stand and eyepiece tube.

The 100 Watt HBO lamp house with integrated mirror for improved light management offers a powerful excitation for brighter signals. In order to avoid unnecessary fading, the excitation intensity can be regulated by the power supply. In combination with a CCD camera from Motic's Professional series, excellent images results are ensured.



# DOCUMENTATION

STANDARD PHOTOMICROGRAPHY | DIGITAL DOCUMENTATION







## REPRODUCIBLE DOCUMENTATION RESULTS OF HIGH RELIABILITY

Documentation is a key issue in every aspect of microscopy, with highest importance in biomedical applications and industrial quality control. The BA410E follows this requirement like all Motic BA microscopes with traditional methods (photomicrography) or more flexible c-mount solutions.

Traditional photomicrography requires the trinocular version of the BA410E. This setup delivers high resolution images of small fields. Live images can be supplied by the software of the SLR camera manufacturer.

A more convenient approach is provided by Motic's philosophy of easy digitization. The combination of the BA410E with a member of the Moticom camera series delivers excellent live images with a large field that can easily be saved for future analysis. The necessary c-mount adapter has to be chosen in relation to the chip size of the digital camera. All Motic cameras come equipped with a complete software package to transform the BA410E into an analysis and documentation station.

For limited bench-top space, Moticom 1080 is ideal solution, as both cameras can deliver High Definition images through an HDMI port without a computer.



# SPECIFICATIONS

## BA410E

### STANDARD CONFIGURATION & OPTIONAL ACCESSORIES



General Specifications



Optional Configuration

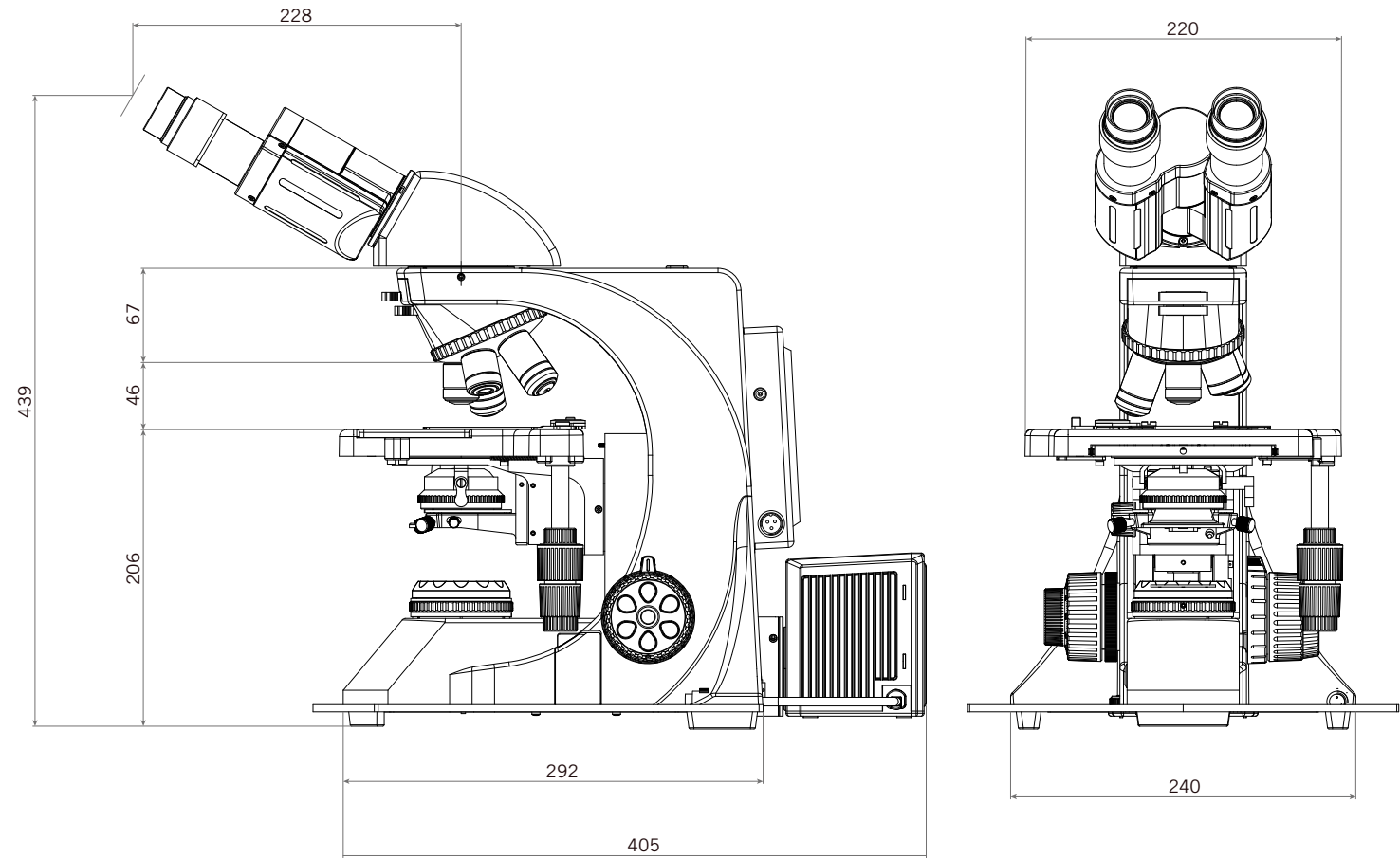
|   |  |  |
|---|--|--|
| Optical system  | CCIS®  |  |
| Observation system  | Siedentopf 30°   |  |
| Interpupillary distance (mm)                                | 48-75  |  |
| Eyepieces   | N-WF 10X/22  | N-WF 12.5X/18; N-WF 15X/16   |
| Eyepieces diopter adjustment                                | +/- 5 dpt  |  |
| Reticles (Ø25mm)  | Crosshair<br>10mm/100 divisions<br>Crossed double scale 10mm/100 divisions               |  |
| Trinocular light split                                      | 100:0/20:80  | 100:0/0:100 - 100:0/20:80/0:100  |
| Nosepiece   | Reversed sextuple  |  |
| Objectives EC-H Plan Achromats                              | 4X/0.10 W.D=15.9mm; 10X/0.25 W.D=17.4mm;<br>40X/0.65 W.D=0.5mm; 100X/1.25 Oil W.D=0.15mm | 2X/0.05 W.D=7.2mm; 20X/0.45 W.D=0.9mm;<br>60X/0.80 W.D=0.35mm  |
| Objectives EC-H Plan Achromats +/- Phase                    |  | 10X/0.25 W.D=17.4mm; 20X/0.45 W.D=0.9mm;<br>40X/0.65 W.D=0.5mm; 100X/1.25 Oil W.D=0.15mm   |
| Objectives Plan UC Fluor                                    |  | 4X/0.13 W.D=17.3mm; 10X/0.3 W.D=11.7mm;<br>20X/0.5 W.D=2.2mm; 40X/0.75 W.D=0.7mm;<br>50X/1.0 oil W.D=0.17mm; 100X/1.3 oil W.D=0.1mm  |
| Objectives Plan Apo   |  | 4X/0.15 W.D.=20mm; 10X/0.35 W.D.=4.2mm;<br>20X/0.65 W.D.=0.7mm; 20X/0.75 W.D.=0.55mm;<br>40X/0.95 W.D.=0.18mm; 100X/1.3 oil. W.D.=0.25mm   |
| Objective mounting thread RMS standard (W 4/5" X 1/36")     | Yes  |  |
| Built-in coaxial mechanical stage with ceramic stage insert | Yes  |  |
| Stage size (mm)   | 180 x 170  |  |
| Travel range (mm)   | 80 x 55; rackless  |  |
| Upper limit stop  | Preset; adjustable   |  |
| Condenser   | Swing out Abbe type N.A.0.9; aperture diaphragm  | Phase contrast 5 position turret condenser (BF, DF, PH1, PH2, PH3)<br>LWD Achromatic condenser N.A.0.65 (WD 10.8 mm)<br>Abbe condenser 0.90/1.25; with slot for Phase/DF sliders |
| Focus mechanism   | Coaxial; tension adjustment  |  |
| Fine focus precision (µm)                                   | 1  |  |
| Z-axis movement (mm)  | 27   |  |
| Filter holder with fixing cap                               | Yes  |  |
| Illumination  | 50W Halogen  | 3W LED   |
| Illumination position                                       | External   |  |
| Koehler   | Yes  |  |
| Multi-Viewing devices                                       | Dual/3-head/5-head   |  |
| Transformer   | Built-in (50W)   |  |
| Power supply  | 110-240V (CE)  |  |
| Filters   | Blue   | Green, yellow, green interference, neutral density, didymium   |

\* Continue on the next page

# SPECIFICATIONS

**BA410E**  
STANDARD CONFIGURATION & OPTIONAL ACCESSORIES (\*)  
SCHEMATIC DIAGRAMS (units: mm)

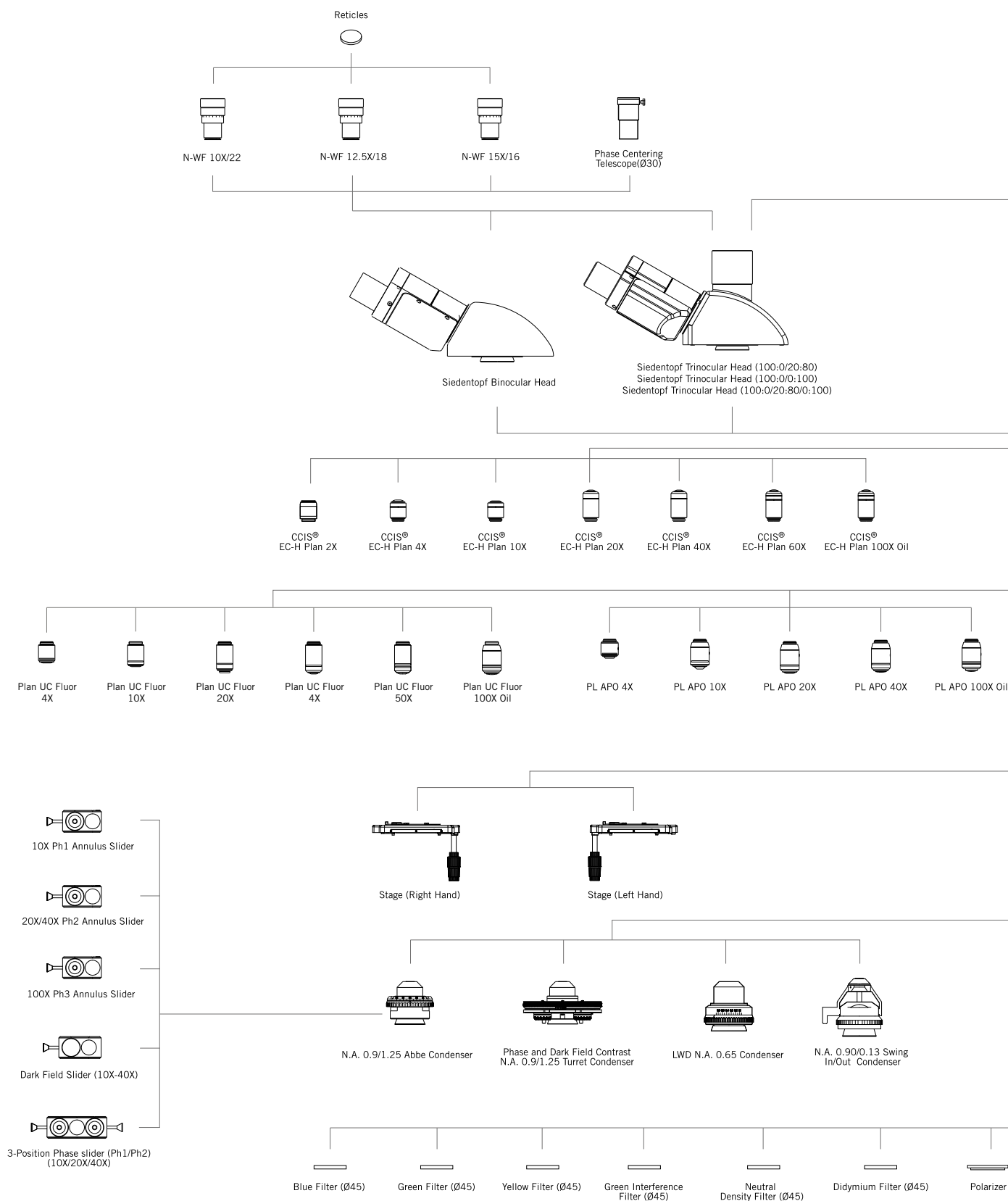
| General Specifications |                       | Optional Configuration |
|------------------------|-----------------------|------------------------|
| Dimensions (mm)        | 550 x 242 x 435 (50W) | 592 x 242 x 435 (100W) |
| Weight (Kg)            | 14,2                  |                        |
| Contrast techniques    |                       |                        |
| Brightfield            | Yes                   |                        |
| Phase contrast         |                       | Slider & Turret        |
| Darkfield              |                       | Slider & Turret        |
| Simple Polarization    |                       | Yes                    |
| HBO Fluorescence       |                       | Yes                    |





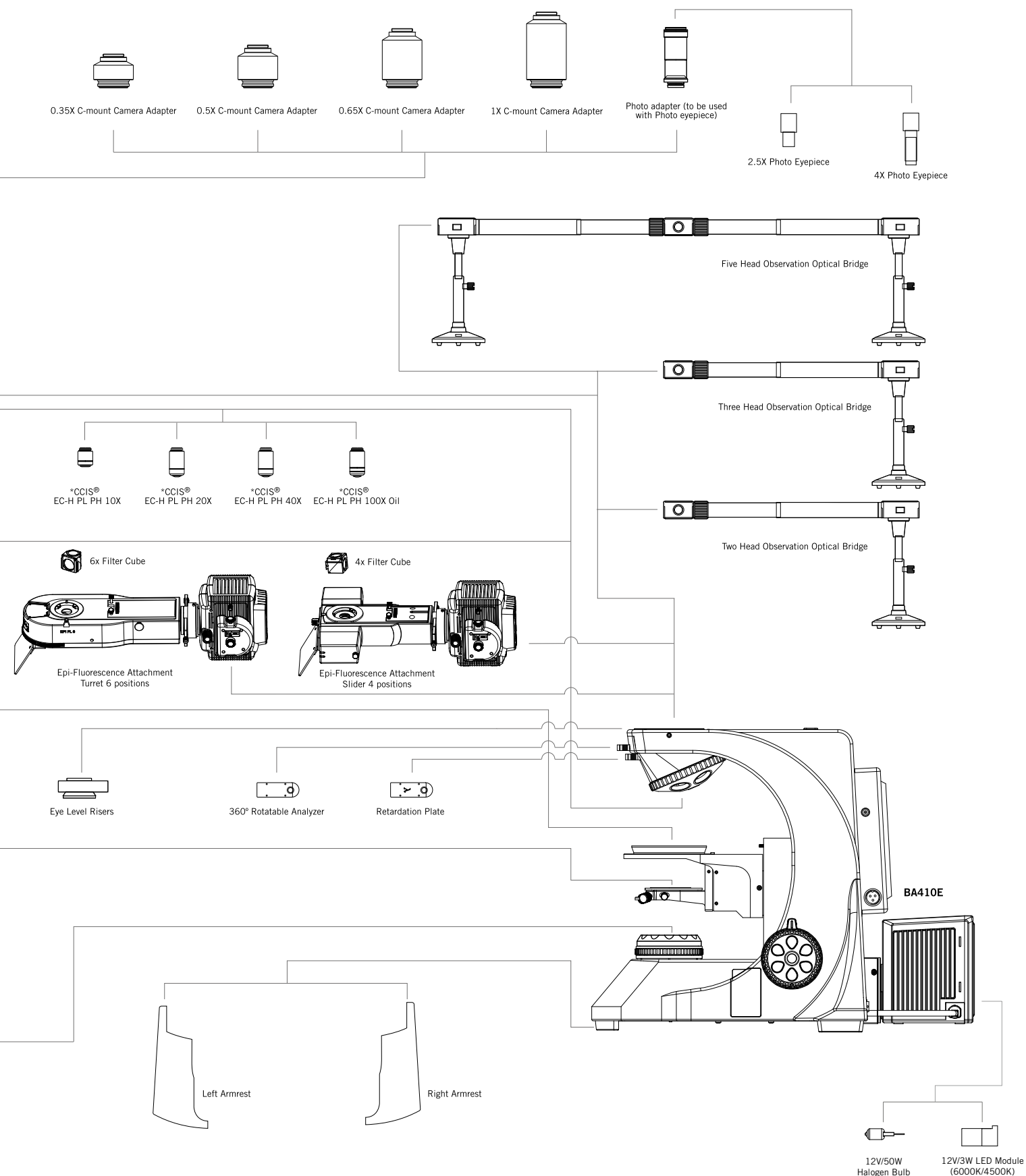
# SPECIFICATIONS

## BA410E SYSTEM DIAGRAM



# SPECIFICATIONS

## BA410E SYSTEM DIAGRAM



\* Standard: positive phase; negative phase available on request



Canada | China | Germany | Spain | USA



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