

# Motic®

MORE THAN MICROSCOPY



LS

## LIFE SCIENCES

SELECTED PRODUCTS FOR LIFE SCIENCE  
APPLICATIONS IN YOUR LABORATORY



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Motic was established in 1988 as a high-tech enterprise specialized in manufacturing conventional compound microscopes. Owned by Speed Fair Co., Ltd, the company has grown into a global brand with sales offices in Canada, Germany, Hong Kong, Spain and the United States.

Within this catalogue, Motic likes to present selected offerings for all kind of Life Science applications in your laboratory.

The BA series of Upright microscopes is designed for advanced school and university usage as well as demanding research work. Motic's CCIS® Infinity Optics ensures superb image results for students and scientists.

Our AE series of Inverted microscopes is meant for any live cell application in microbiology labs of universities and pharmaceutical industry.

Stereo microscopes are cosmopolitans as well as ubiquitous: No scientific teaching nor laboratory work can be imagined without. Motic's SMZ series of stereo microscopes delivers powerful instruments for any kind of 3-D visualization.

All microscopes offered by Motic have the potential to become a digital work station by integrating our CMOS and CCD cameras, equipped with self-developed software. As an integrated solution or as an add-on: we envision this digitalisation of our microscopes to empower you for the tasks of today and tomorrow.

The following pages contain our lines of Life Science microscopes for your study. We also welcome you to become more acquainted with our products by visiting [www.moticeurope.com](http://www.moticeurope.com) or contacting your local Motic representative.

*Your Motic Europe Team*

## LIFE SCIENCES CATALOGUE



# LIFE SCIENCES

SELECTED PRODUCTS FOR LIFE SCIENCE  
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# BA210 SERIES

BASIC BIOLOGICAL MICROSCOPE



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## BASIC UPRIGHT MICROSCOPE FOR TEACHING ENVIRONMENTS

The BA-210 microscopes are basic, yet powerful instruments for all teaching environments in schools and universities. Based on Motic's CCIS® Infinity Optical System, they deliver crisp and clear images, thus enabling an effective training in all biological and medical curricula.

A small footprint, easy grip for carrying and a convenient power cord storage prove Motic's dedication to the special demands of educational environments.

The Elite version of BA-210 is a refined microscope with EC-Plan Achromat objectives for improved color fidelity, field flatness and contrast. A rackless stage gives even more safety to unexperienced users. LED & Halogen light source can easily be interchanged. A RoHS compliant manufacturing process prohibits student contact to lead-containing materials.

All BA-210 models are upgradeable with Phase contrast and POL contrast, giving access to more advanced microscopic methods.



HAL  LED



# BA310 SERIES

ADVANCED BIOLOGICAL MICROSCOPE



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## ADVANCED BIOLOGICAL MICROSCOPE FOR UNIVERSITY AND LABORATORIES

The BA-310 models are advanced Upright microscopes for university and laboratory. Routine laboratory work as well as ambitious teaching in all biomedical fields can easily be performed. Full Koehler illumination is implemented for examination of low-contrast samples. A most flexible Phase contrast, Darkfield and POL contrast as well as Multi-Viewing-Devices are ready for junior research work.

The BA-310 Elite microscopes furthermore are prepared for a turn-key Fluorescence solution with LED light source. Easy usage and secure handling - the Fluorescence method now can be implemented in education programs of medical schools. Optional Non-Cover-Glass (NCG) objectives, designed for non-covered slide samples, enlarge the application spectrum for fast examination of smears and aspirates.



# BA410 SERIES

CLINICAL & LAB MICROSCOPE PLATFORM





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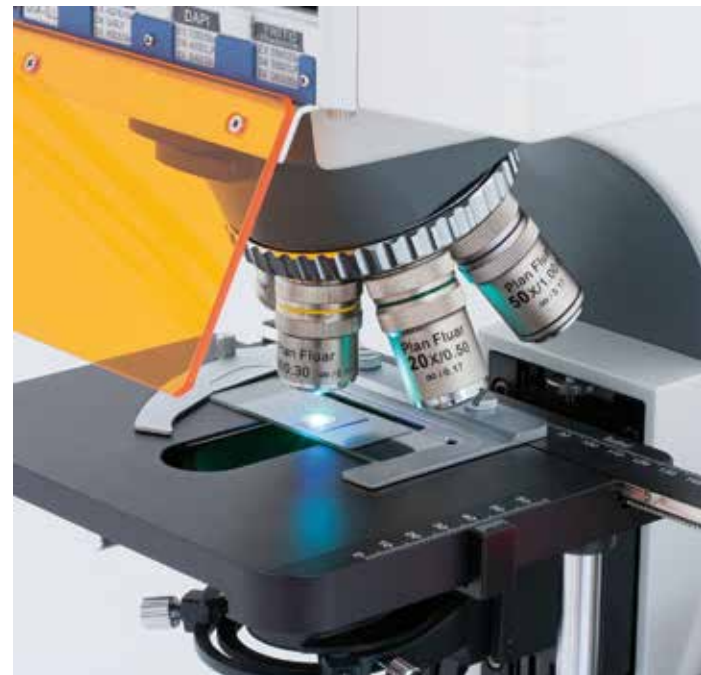


## ADVANCED BIOLOGICAL MICROSCOPE PLATFORM FOR RESEARCH WORK

The BA-410 is Motic's flagship model of Upright biological microscopes. For research work in university and clinical laboratories, the BA-410 is dedicated to highest image quality, yet being affordable for today's budgets. The EC-H optics offer superior color reproduction for pathology work, best field flatness for cytological screening and excellent resolution power: endeavour the best optical performance of Motic's CCIS® Infinity System.

The optional 50W Halogen stand gives plenty of illumination power for a variety of Multi-Viewing-Devices, sharing the complete view of the teacher with a number of students.

The high transmittance of multi-coated glasses, built in the EC-H optics, deliver bright signals in Fluorescence. Optional Plan Fluorite lenses with improved Numerical Aperture help to optimize signal efficiency. Special eyepiece tubes with 0/100 split give 100% available light to the photo port for best documentation options.



# AE2000 SERIES

ROUTINE LIVE CELL MICROSCOPE



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## BASIC MICROSCOPE FOR MICROBIOLOGY

The AE-2000 Inverted microscopes are intelligent and smart instruments for routine live cell studies in microbiology. Easy to use, a clever Phase contrast setup (one illumination ring for 10X up to 40X objectives) helps to eliminate handling errors. Powerful Long-Working distance objectives from Motic's CCIS® System are prepared to deliver perfect image results with adherent and floating cell cultures in petri dishes and well plates. An optional 4X Phase objective enables fast screening of large areas.

Excellent manufacturing quality ensures maximum satisfaction and reliability during daily work. Easy interchangeability of Halogen and LED light source is guaranteed by a simple "pull out-plug in" of the respective illumination device.

With an innovative energy-saving AUTO-OFF function (IR-sensor based), the AE-2000 is GoingGreen, completely fulfilling the RoHS rules how to treat hazardous substances.



# AE30 SERIES

UPGRADEABLE LIVE CELL MICROSCOPE PLATFORM



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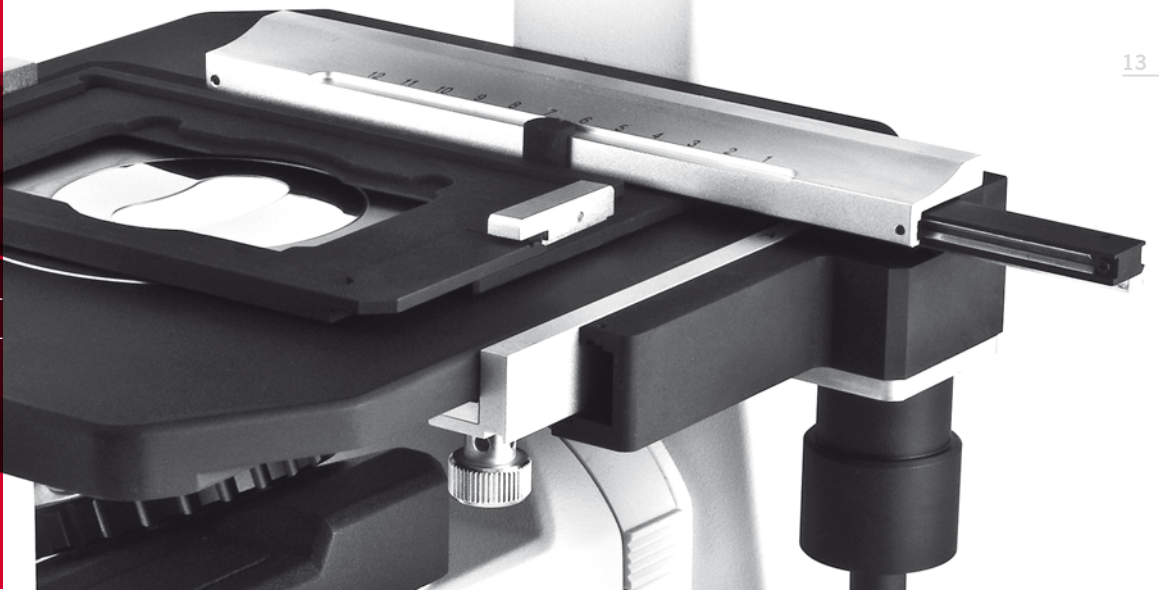
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## LIVE CELL MICROSCOPE PLATFORM

The AE-30/31 Inverted microscopes are dedicated to research work in microbiology and other live cell applications. A large Field of View (22mm), paired with Koehler illumination, allows a fast screening and thus enables an effective workflow in pharmaceutical and medical laboratories. Basic packages are already equipped with a complete Phase equipment from 10X up to 40X objectives; no need to look for further components.

Fluorescence is prepared by an optional 3-position slider mechanism with a 100W HBO light source setup. A set of established Fluorescence filter combinations from UV to long wavelength Cy5 excitations are part of our portfolio. Individually configurable filter combinations are available on request for any kind of scientific approach.

A trinocular stand option with 0/100 light split to the photo port gives best condition for easy documentation possibilities.



# SMZ161 SERIES

BASIC STEREO MICROSCOPE



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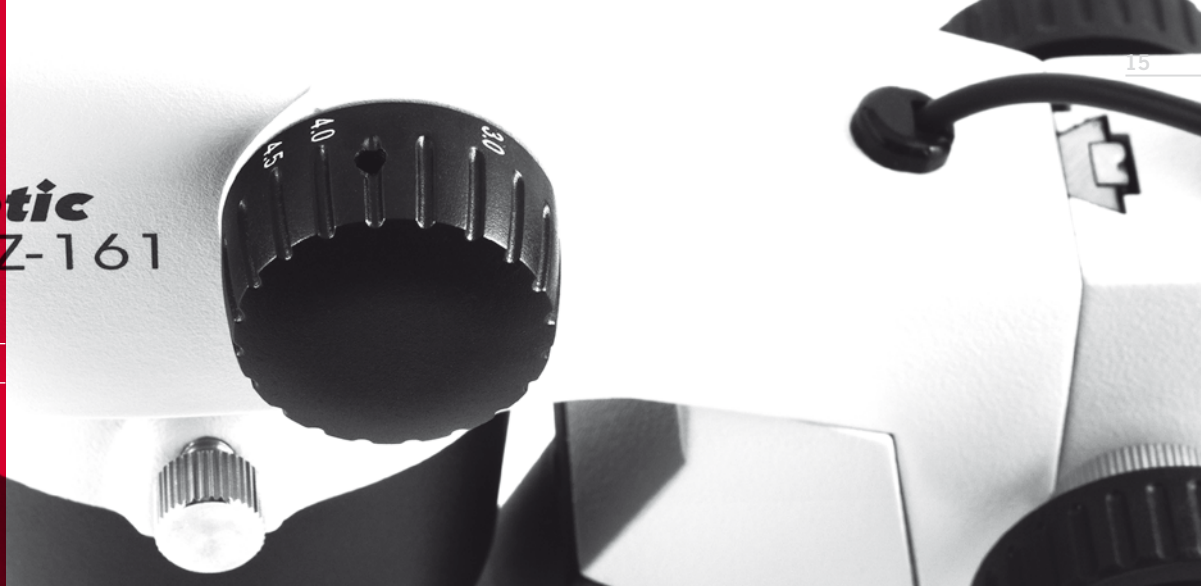
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**Motic**  
**SMZ-161**



## BASIC STEREO MICROSCOPE FOR TEACHING

The SMZ-161 model is a basic stereo microscope for all kind of 3-D visualization in schools and universities. Compact footprint for easy cabinet storage, student-proof features like lockable eyepieces: this instrument is ready to demonstrate three-dimensionality of various biological and medical structures to the students.

The moderate magnification power of a stereo microscope as well as the erect, upright image allows a fast access to the specimen also for unexperienced users. Easy to use, these instruments deliver crisp and distortion-free images. Incident and transmitted light sources for opaque and transparent specimen are integral part of the basic packages: plug-in and start working.

For individual setups, auxiliary objectives and alternative eyepieces allow to extend the magnification range. For large-dimensioned samples, special stands and external illumination devices are optional.



# SMZ171 SERIES

FLEXIBLE STEREO MICROSCOPE SOLUTION





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## FLEXIBLE STEREO MICROSCOPE SOLUTION FOR RESEARCH

The SMZ-171 models are high-performance stereo microscopes in demanding applications. For research tasks in all biomedical sciences, these stereo microscopes are essential tools for daily work. Superb resolution power is paired with a stunning three-dimensionality. A bright LED illumination is the basis for a spectacular color fidelity. LED as a “cool” light source is especially recommended when it comes to heat sensible biological samples. A tilting reflector allows oblique transmitted illumination. For more illumination power, a light guide with external cold light source can be coupled into the base.

Extended working distances of the objectives give handling freedom for any manipulation of opaque and transparent specimen. Biological preparation work of animals and plants is easily done.

Special stands for treatment of large-dimensioned specimen and additional illumination options underline the system’s flexibility for difficult visualizations.



# MOTICAM SERIES

FLEXIBLE DIGITAL SOLUTIONS



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## UPGRADE YOUR MICROSCOPE AND GET A DIGITAL WORK STATION

Accurate documentation is becoming an increasingly important task in natural sciences. Any member of the Moticam series of digital cameras delivers excellent live images, ready for post-capture handling. The complete range of digital cameras starts with a basic resolution of 1.3MP (CMOS), going up to 10MP for maximum resolution. Each camera comes with self-developed software for data handling and quantification tasks.

The Moticam Pro Line offers research-grade solutions up to 5MP for demanding applications like Fluorescence or Darkfield. CCD technology here is the basis for highest color fidelity and best sensitivity.

In case of presentation purposes, Moticam 580 with HDMI output certainly will be most interesting. No computer is required to run the system, simply connect camera and HDMI monitor with its stunning color reproduction.

For a group work approach in classrooms, Moticam X with WIFI data transfer suits perfectly. The camera allows access of multiple tablet computers, so one microscope as imaging source is sufficient to feed up to 6 student tablets with images for homework.



# SPECIFICATIONS

## BA SERIES COMPARISON TABLE



BA210



BA210E

**Model**

|  |   |   |
|--|---|---|
| Optical system   | CCIS®   | CCIS®   |
| Observation system   | Siedentopf 30°; 360° rotation                                   | Siedentopf 30°; 360° rotation                                   |
| Interpupillary distance (mm)                               | 55-75   | 55-75   |
| Eyepieces  | N-WF 10X/20   | N-WF 10X/20   |
| Eyepieces diopter adjustment                               | +/- 5 dpt   | +/- 5 dpt   |
| Trinocular light split                                     | 20/80   | 20/80   |
| Nosepiece  | Reversed quadruple  | Reversed quadruple  |
| Standard objectives  | EF-N Plan Achromat  | EC Plan Achromat  |
| Objective magnification range                              | 4X up to 100X   | 4X up to 100X   |
| Additional objectives                                      | No  | No  |
| Positive and negative phase objectives                     | EC-H Plan Phase   | EC-H Plan Phase   |
| Objective mounting thread RMS standard<br>(W 4/5" x 1/36") | Yes   | Yes   |
| Built-in coaxial mechanical stage<br>with sample holder    | Yes   | Yes   |
| Stage size (mm)  | 140 x 135   | 150 x 150   |
| Mechanical stage X&Y range (mm)                            | 76 x 50   | 80 x 30   |
| Upper limit stop   | Preset; adjustable  | Preset; adjustable  |
| Condenser<br>(Focusable Abbe type)                         | N.A. 1.25 + iris diaphragm<br>+ slot for Phase contrast sliders | N.A. 1.25 + iris diaphragm<br>+ slot for Phase contrast sliders |
| Focus mechanism  | Coaxial; tension adjustment                                     | Coaxial; tension adjustment                                     |
| Minimum fine focus precision (µm)                          | 2   | 2   |
| Z-axis movement (mm)                                       | 25  | 20  |
| Filter holder with fixing cap                              | Yes   | Yes   |
| Illumination   | 30W Halogen; 3W LED; mirror                                     | 30W Halogen; 3W LED; mirror                                     |
| Halogen / LED interchangeability                           | No  | Yes   |
| Illumination position                                      | Built-in  | Built-in  |
| Koehler  | No  | No  |
| Multi-Viewing-Devices                                      | No  | No  |
| Transformer  | Built-in  | Built-in  |
| Power supply   | 110-240V (CE)   | 110-240V (CE)   |
| Filters included   | Blue  | Blue  |
| Dimensions (mm)  | 360 x 190 x 395   | 360 x 220 x 398   |
| Weight (Kg)  | 7,2   | 7,2   |
| <b>Contrast techniques</b>                                 |   |   |
| Brightfield  | Yes   | Yes   |
| Phase contrast   | Slider  | Slider  |
| Simple polarization  | Yes   | Yes   |
| HBO Fluorescence   | No  | No  |
| LED Fluorescence   | No  | No  |



BA310



BA310E



BA410

Model

| BA310  | BA310E   | BA410   | Model  |
|--|--|---|--|
| CCIS®  | CCIS®  | CCIS®   | Optical system   |
| Swiveling Siedentopf 30°;360° rotation                               | Swiveling Siedentopf 30°;360° rotation                               | Siedentopf 30°; 360° rotation                   | Observation system   |
| 48-75  | 48-75  | 48-75   | Interpupillary distance (mm)                               |
| N-WF 10X/20  | N-WF 10X/20  | N-WF10X/22                                      | Eyepieces  |
| +/- 5 dpt  | +/- 5 dpt  | +/- 5 dpt                                       | Eyepieces diopter adjustment                               |
| 20/80; optional 0/100  | 20/80; optional 0/100  | 20/80; optional 0/100                           | Trinocular light split                                     |
| Reversed quintuple   | Reversed quintuple   | Reversed sextuple                               | Nosepiece  |
| EF-N Plan Achromat   | EC Plan Achromat   | EC-H Plan Achromat                              | Standard objectives  |
| 4X up to 100X  | 4X up to 100X  | 2X up to 100X                                   | Objective magnification range                              |
| No   | EC Plan Achromat NCG   | Plan Fluor                                      | Additional objectives                                      |
| EC-H Plan Phase  | EC-H Plan Phase  | EC-H Plan Phase                                 | Positive and negative phase objectives                     |
| Yes  | Yes  | Yes   | Objective mounting thread RMS standard<br>(W 4/5" x 1/36") |
| Yes  | Yes  | Yes;<br>selectable right or left hand           | Built-in coaxial mechanical stage<br>with sample holder    |
| 175 x 140  | 180 x 170  | 175 x 145                                       | Stage size (mm)  |
| 76 x 50  | 80 x 55  | 80 x 53   | Mechanical stage X&Y range (mm)                            |
| Preset; adjustable   | Preset; adjustable   | Preset; adjustable                              | Upper limit stop   |
| N.A. 0.90/1.25 + iris diaphragm<br>+ slot for Phase contrast sliders | N.A. 0.90/1.25 + iris diaphragm<br>+ slot for Phase contrast sliders | Swing-out Abbe N.A. 0.90<br>with iris diaphragm | Condenser<br>(Focusable Abbe type)                         |
| Coaxial; tension adjustment  | Coaxial; tension adjustment  | Coaxial; tension adjustment                     | Focus mechanism  |
| 2  | 2  | 1   | Minimum fine focus precision (µm)                          |
| 20   | 20   | 27  | Z-axis movement (mm)                                       |
| Yes  | Yes  | Yes   | Filter holder with fixing cap                              |
| 30W Halogen; 3W LED  | 30W Halogen; 3W LED  | 30W Halogen/50W Halogen/3W LED                  | Illumination   |
| No   | Yes  | Only for 30W Halogen                            | Halogen / LED interchangeability                           |
| Built-in   | Built-in   | External  | Illumination position                                      |
| Yes  | Yes  | Yes   | Koehler  |
| Dual/3-head/5-head   | Dual/3-head/5-head   | Dual/3-head/5-head                              | Multi-Viewing-Devices                                      |
| Built-in   | Built-in   | Built-in  | Transformer  |
| 110-240V (CE)  | 110-240V (CE)  | 110-240V (CE)                                   | Power supply   |
| Blue   | Blue   | Blue  | Filters included   |
| 400 x 200 x 400  | 400 x 220 x 400  | 550 x 242 x 435                                 | Dimensions (mm)  |
| 8,6  | 8,6  | 14,2  | Weight (Kg)  |
|  |  |   | <b>Contrast techniques</b>                                 |
| Yes  | Yes  | Yes   | Brightfield  |
| Slider & Turret  | Slider & Turret  | Slider & Turret                                 | Phase contrast   |
| Yes  | Yes  | Yes   | Simple polarization  |
| No   | No   | Yes   | HBO Fluorescence   |
| No   | Yes  | Yes   | LED Fluorescence   |

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## AE SERIES COMPARISON TABLE



AE2000



AE30 / 31

| Model   | AE2000  | AE30 / 31   |
|---|---|---|
| Optical system  | CCIS®   | CCIS®   |
| Observation system                                      | Swiveling 360° with 45° inclination                           | 45° inclination   |
| Interpupillary distance (mm)                            | 48-75   | 55-75   |
| Eyepieces   | N-WF 10X/20   | WFPL 10X/22   |
| Eyepieces diopter adjustment                            | +/- 5 dpt   | +/- 5 dpt   |
| Trinocular light split                                  | 20/80   | 20/80; 0/100 optional   |
| Tilting tube  | No  | No  |
| Nosepiece   | Tilted, quadruple   | Tilted, quintuple   |
| Standard objectives                                     | New generation Plan Achromats                                 | Plan Achromats  |
| Objective magnification range                           | 4X up to 40X  | 4X up to 60X  |
| Phase objectives  | 4X up to 40X  | 10X up to 40X   |
| Universal Phase ring for objectives 10X up to 40X       | Yes   | No  |
| Objective mounting thread RMS standard (W 4/5" X 1/36") | Yes   | Yes   |
| Stage plate with lateral extensions                     | Yes   | Yes   |
| Stage size (mm)   | 200 x 239   | 200 x 260   |
| Attachable stage with inserts                           | Yes   | Yes   |
| Condenser   | N.A. 0.3 + iris diaphragm<br>+ slot for Phase slider; WD 72mm | N.A. 0.3 + iris diaphragm<br>+ slot for Phase slider; WD 72mm |
| Focus mechanism   | Coaxial, with tension adjustment                              | Coaxial, with tension adjustment                              |
| Minimum Fine focus precision (µm)                       | 2   | 2   |
| Z-axis movement (mm) of nosepiece                       | 8   | 10  |
| Illumination  | 30W Halogen; 3W LED   | 30W Halogen   |
| Halogen / LED interchangeability                        | Yes   | No  |
| Koehler   | No  | Yes   |
| Auto OFF  | Yes   | No  |
| Transformer   | Internal  | Internal  |
| Filters included  | Blue, Green   | Blue, Green   |
| Dimensions (mm)   | 556 x 218 x 496   | 662 x 200 x 529   |
| Weight (Kg)   | 12,2  | 11,4  |
| <b>Contrast techniques</b>                              |   |   |
| Brightfield   | Yes   | Yes   |
| Phase contrast  | 4X up to 40X  | 10X up to 40X   |
| Relief Contrast   | No  | No  |
| HBO Fluorescence  | No  | Yes   |

# SPECIFICATIONS

## SMZ SERIES COMPARISON TABLE



**SMZ161**



**SMZ171**

| Model  | SMZ161                             | SMZ171                             |
|--|------------------------------------|------------------------------------|
| Optical system                                     | Greenough                          | Greenough                          |
| Observation angle                                  | 45°; 60° optional                  | 45°; 60° optional                  |
| Interpupillary distance (mm)                       | 50-75                              | 48-75                              |
| Standard eyepieces                                 | WF10X/20                           | WF10X/23                           |
| Optional eyepieces                                 | 15X; 20X                           | 12.5X; 15X; 20X                    |
| Diopter adjustment                                 | +/- 5dpt on both eyepiece tubes    | +/- 5dpt on eyepieces              |
| Standard magnification range                       | 7.5X-45X                           | 7.5X-50X                           |
| Additional objectives                              | 0.3X; 0.5X; 0.63X; 0.75X; 1.5X; 2X | 0.3X; 0.5X; 0.63X; 0.75X; 1.5X; 2X |
| ESD compatible objectives                          | Yes                                | Yes                                |
| ESD compatible stands                              | No                                 | Yes                                |
| Zoom ratio   | 1:6                                | 1:6.7                              |
| Working distance (mm)                              | 110                                | 110                                |
| Focus tension adjustment                           | Yes                                | Yes                                |
| Halogen Illumination                               | 10W Incident & Transmitted         | No                                 |
| LED Illumination                                   | Yes                                | 3W LED Incident & Transmitted      |
| Transmitted light with reflector                   | Yes                                | Yes, tiltable                      |
| CCD Adapters                                       | 0.35X; 0.5X; 0.65X; 1X             | 0.35X; 0.5X; 0.65X; 1X             |
| SLR Adapters                                       | Yes; 2.5X, 4X                      | Yes; 2.5X, 4X                      |
| Implementation of fiber optics (transmitted light) | No                                 | Yes                                |
| Dimensions LxWxH (mm)                              | 237 x 170 x 397                    | 303 x 239 x 405                    |
| Weight (Kg)  | 3,7                                | 6.2                                |

# Motic®



[www.moticeurope.com](http://www.moticeurope.com)

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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.

Designed in Barcelona (Spain)

November 2013



Official Distributor: