

OPTIKA[®]

M I C R O S C O P E S
I T A L Y



EDUCATIONAL Microscopes

ECOVISION / B-150 / B-190 / STEREO / LAB Series



EDUCATIONAL Microscopes



























Biological Microscopes

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Stereomicroscopes

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LAB SERIES - Stereomicroscopes For Students And Teachers	page 65

Icons

	Monocular		Anti-fungus treatment		X-LED illuminator
	Binocular		Incident light		Automatic light control
	Trinocular		Transmitted light		Rechargeable battery
	Inclined head		Polarized light		USB connection
	Field number		Halogen lamp		Tablet screen size
	Eyepiece with pointer		Tungsten lamp		Camera resolution
	Rotating head 360°		Dichroic lamp		Software included
	Infinity-corrected optics		LED illuminator		Calibration slide
	Max. magnification		1W LED illuminator		

ECOVISION Series



Entry Level Biological Microscopes For Students

B-20 / B-20R / B-20Solar / B-20C / B-50
M-100FL / M-100FL-H / M-100FLed / DM-5 / DM-5UP

A Range Of Quality Microscopes For Students

DESIGNED FOR NOVICE USERS

- » Extremely reliable microscopes for education
- » Particularly recommended for primary school
- » Get impressive images and live videos with cameras

BIOLOGICAL EDUCATIONAL MICROSCOPES

- » Choose among monocular and binocular heads
- » Up to 18mm field number available
- » Achromatic lenses for standard applications



Attention To Detail

HANDY, YET EXTREMELY STABLE

- » Compact, practical and intuitive to use
- » Optics ensuring good quality images
- » Easy to handle, also by the youngest students

EASY TO TAKE CARE OF

- » Sturdy, durable for extended lifetime
- » Only simple lens cleaning is required time to time
- » Dust cover protects from environmental contaminants



ECOVISION Series

Easy To Carry Solutions

This series is characterized by extreme compactness and portability.

The instrument can be moved easily in the classroom or even outdoors.

The body of the microscope is slim and, according to the model, provided with a useful handle: the teaching activity will be facilitated and more enjoyable.

Extremely Easy And Fast Vision

You find here the basic controls of an optical microscope and all you need to start learning to use a scientific instrument. Pre-aligned illumination and condenser simplify the operation and make necessary just the focusing of the specimen by using the dedicated knobs.

LED - Optimized Illumination

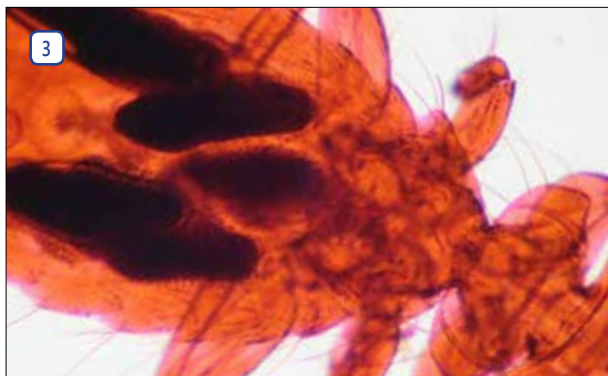
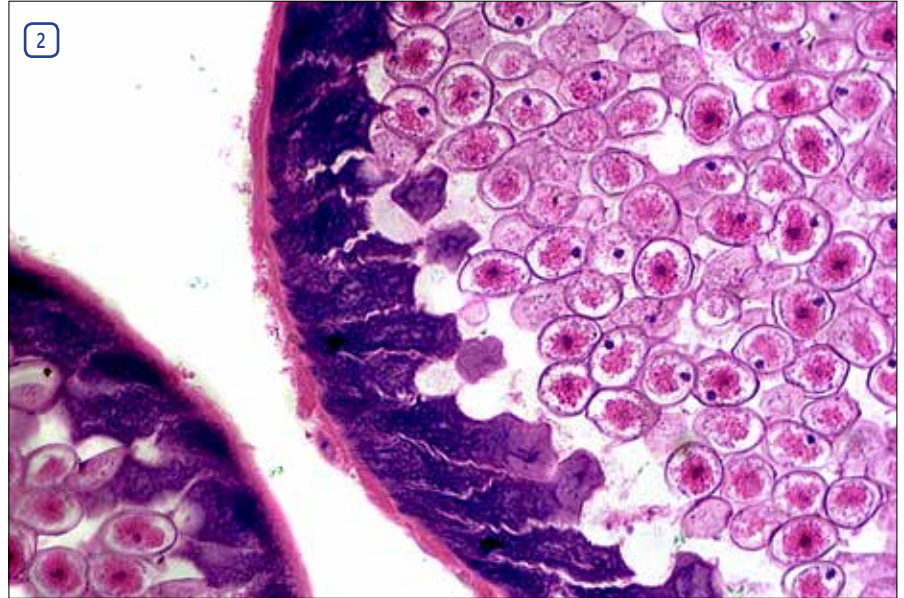
Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/ day) which is more than 20 times compared to a standard halogen bulb.

Versions with LED have either internal or external rechargeable battery for many hours of outdoor use.

B-50 model has a special condenser with a settable, built-in LED light source that guarantees a very bright illumination in a compact and pre-aligned system.



Entry Level Biological Microscopes For Students



Legend

1. DM-5UP, digital microscope with built-in camera ideal during on-site use.
2. Ascaris female, with B-50 and 10x objective.
3. Dust mite, with B-20 and 40x objective.
4. Special condenser of B-50 with settable built-in 1W LED light source for bright illumination in a compact, pre-aligned system.

ECOVISION Series - Overview

Monocular biological microscopes designed especially for students attending primary school.

Obtain clear images at three (40x, 100x and 400x) magnifications with this basic series offering sturdy and compact structure but very easy to be carried. Choose the most suitable microscope according to the required application.



Observation mode:

Brightfield.

Head:

Monocular, 360° rotating and 45° inclined.

Eyepieces:

B-20 / B-20R / B-20Solar / DM-5 / DM-5UP:

WF10x/16 mm.

B-20C, B-50, M-100FL, M-100FL-H, M-100FLed:

WF10x/18 mm.

Nosepiece:

Triple revolving nosepiece, rotation on ball bearings.

Objectives:

Achromatic (4x, 10x, 40x) with an anti-fungus treatment.

Specimen stage:

B-20 / B-20R / B-20Solar / DM-5 / DM-5UP:

Rotatable round stage, 90mm diameter.

B-20C:

Mechanical stage, 105x95mm.

B-50 / M-100FL models:

Fixed stage, 120x110mm.

Focusing:

B-20 / B-20R / B-20Solar / DM-5 / DM-5UP / M-100FL models:

Separate coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

B-20C / B-50:

Coaxial coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Condenser:

B-20 / B-20R / B-20Solar / DM-5 / DM-5UP:

Built-in lens with diffusing filter.

B-20C / B-50 / M-100FL models:

N.A. 0.65 pre-centered.

Illumination:

B-20 / B-20C / DM-5 / DM-5UP:

White LED with light intensity control.

B-20R / M-100FLed:

White LED with light intensity control and rechargeable battery.

B-20Solar:

White LED powered by solar panel.

B-50:

White LED with light intensity control (integrated in the condenser).

M-100FL:

20W tungsten lamp.

M-100FL-H:

10W halogen lamp.

ECOVISION Series - Range

B-20



Equipped with **efficient LED illumination** and **comfortable handle**, being ideal even for the youngest students.

B-20R



It comes with a **rechargeable battery** which provides up to 24 hours of outdoor use.

B-20Solar



Ideal for several hours of outdoor use thanks to the low consumption LED illumination and the **solar panel** which constantly powers this microscope.

B-20C



Recommended for **wider observation area** with **18mm field number**, it is equipped with condenser, coaxial focus knobs and mechanical stage.

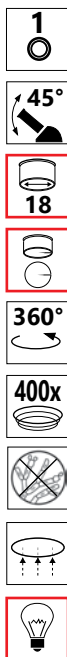
ECOVISION Series - Range

B-50



The **condenser with built-in LED illumination system** ensures **ultra-bright light and great contrast**. Light intensity is freely settable by the dedicated adjustable knob.

M-100FL



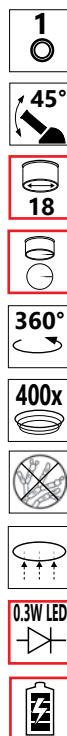
Equipped with **tungsten illumination**, 45° inclined and 360° rotating head, it is recommended for wider observation area with 18mm field number. Optional 60x and 100x objectives available.

M100FL-H



Equipped with **halogen illumination**, 45° inclined and 360° rotating head, it is recommended for wider observation area with 18mm field number. Optional 60x and 100x objectives available.

M-100FLed

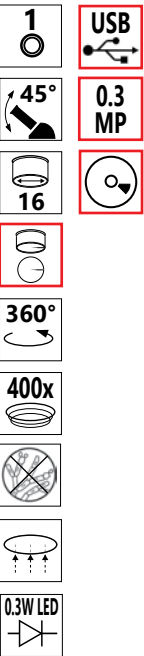


Equipped with **efficient LED illumination** and internal **rechargeable battery** which provides up to 8 hours of outdoor use. Optional 60x and 100x objectives available.

ECOVISION Series - Range

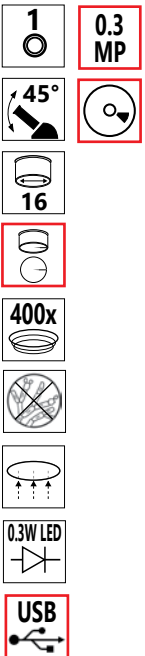
OPTIKA digital microscopes have been designed to provide operating simplicity and absolute reliability, delivering fast, accurate and dependable results. The proven ease of use combined with the premium quality construction and the outstanding optical system make the study of biology a pleasant experience for the new generations!

DM-5



Entry level **digital microscope** (with external power supply) with **0.3MP built-in camera** and “plug & play” software, being the first choice for primary schools.

DM-5UP



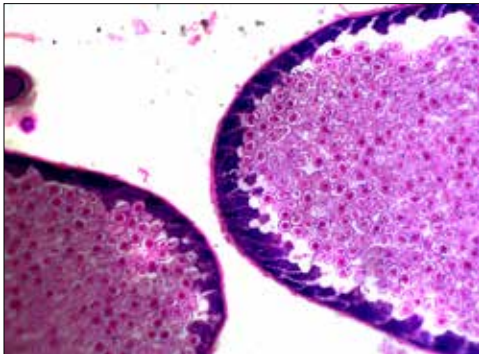
Entry level **digital microscope** (powered by **USB** and external power supply) with **0.3MP built-in camera** and “plug & play” software, being the first choice for primary schools.



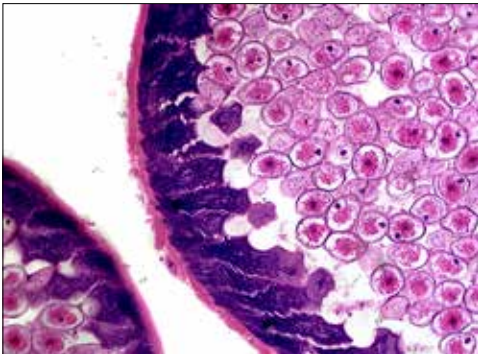
ECOVISION Series - DM-5 Camera specifications

	DM-5 and DM-5UP
Resolution	640x480 pixels
Sensor	1/4"CMOS
Pixel size	7.9x7.9 μm
Resolution & Frame Rate	640x480 - 25 fps
Sensitivity	2.0 V/Lux-sec
White Balance	Auto / Manual
S/N Ratio	≥50 dB
Dynamic Range	≥ 60 dB
Digital Port	USB 2.0
Imaging Software	OPMIAS
System Requirements	Operating system: Windows XP, Vista, Win7, Win8, Win10, 32-64 bit

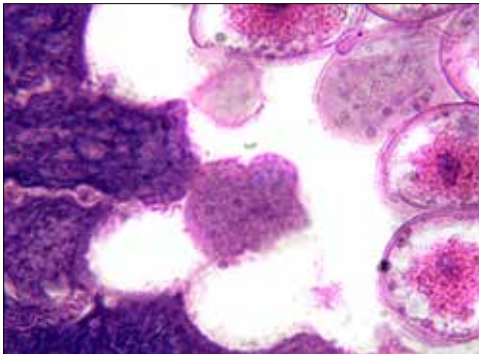
ECOVISION Series - Zoom comparison



Ascaris female - B-50 - 4x objective



Ascaris female - B-50 - 10x objective



Ascaris female - B-50 - 40x objective



ECOVISION Series - Comparison chart

Model	Head	Eyepieces	Objectives	Stage	Focusing	Condenser	Illuminator
B-20	Monocular, 360° rotating, 45° inclined	Wide Field 10x/16mm with pointer	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90mm diameter, with sample clips	Separate coarse and fine control knobs	Built-in lens with diffusing filter	0,3W LED
B-20R	Monocular, 360° rotating, 45° inclined	Wide Field 10x/16mm with pointer	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90mm diameter, with sample clips	Separate coarse and fine control knobs	Built-in lens with diffusing filter	0,3W LED with rechargeable battery
B-20Solar	Monocular, 360° rotating, 45° inclined	Wide Field 10x/16mm with pointer	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90mm diameter, with sample clips	Separate coarse and fine control knobs	Built-in lens with diffusing filter	0,3W LED powered by solar panel
B-20C	Monocular, 360° rotating, 45° inclined	Wide Field 10x/18mm	Achromatic 4x, 10x, 40x	Mechanical stage, 105x95mm with specimen holder	Coaxial coarse and fine control knobs	N.A. 0.65, fixed	0,3W LED
B-50	Monocular, 360° rotating, 45° inclined	Wide Field 10x/18mm	Achromatic 4x, 10x, 40x	Fixed stage, 120x110 mm with sample clips	Coaxial coarse and fine control knobs	N.A. 0.65, fixed	1W LED built-in in the condenser
M-100FL	Monocular, 360° rotating, 45° inclined	Wide Field 10x/18mm with pointer	Achromatic 4x, 10x, 40x	Fixed stage, 120x110 mm with sample clips	Separate coarse and fine control knobs	N.A. 0.65, fixed, with aperture diaphragm	20W tungsten
M-100FL-H	Monocular, 360° rotating, 45° inclined	Wide Field 10x/18mm with pointer	Achromatic 4x, 10x, 40x	Fixed stage, 120x110 mm with sample clips	Separate coarse and fine control knobs	N.A. 0.65, fixed, with aperture diaphragm	10W halogen
M-100FLed	Monocular, 360° rotating, 45° inclined	Wide Field 10x/18mm with pointer	Achromatic 4x, 10x, 40x	Fixed stage, 120x110 mm with sample clips	Separate coarse and fine control knobs	N.A. 0.65, fixed, with aperture diaphragm	0,3W LED with rechargeable battery
DM-5	Monocular, 360° rotating, 45° inclined	Wide Field 10x/16mm with pointer	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90mm diameter, with sample clips	Separate coarse and fine control knobs	N.A. 0.65, fixed	0,3W LED
DM-5UP	Monocular, 45° inclined	Wide Field 10x/16mm with pointer	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90mm diameter, with sample clips	Separate coarse and fine control knobs	N.A. 0.65, fixed	0,3W LED

ECOVISION Series - Accessories

ACCESSORIES FOR B-20 - B-20R - B-20 SOLAR

M-044	Eyepiece with pointer WF10x/16mm.
M-727	ACH (Achromatic) objective 4x/0.10.
M-728	ACH (Achromatic) objective 10x /0.25.
M-729	ACH (Achromatic) objective 40x/0.65.
DC-001	Plastic dust cover, small.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-069	Solar battery pack (only for B-20R).
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR B-20C

M-002	Eyepiece WF10x/18mm.
M-008	Eyepiece with pointer WF10x/18mm.
M-727	ACH (Achromatic) objective 4x/0.10.
M-728	ACH (Achromatic) objective 10x /0.25.
M-729	ACH (Achromatic) objective 40x/0.65.
DC-001	Plastic dust cover, small.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR M-100FL - M-100FL-H - M-100FLED

M-001	Eyepiece H5x.
M-002	Eyepiece WF10x/18mm.
M-003	Eyepiece WF16x/12mm.
M-004	Eyepiece with micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF10x/18mm.
M-131	ACH (Achromatic) objective 4x/0.10.
M-132	ACH (Achromatic) objective 10x/0.25.
M-133	ACH (Achromatic) objective 20x/0.40.
M-134	ACH (Achromatic) objective 40x/0.65.
M-135	ACH (Achromatic) objective 60x/0.80.
M-136	ACH (Achromatic) objective 100x/1.25 (Oil).
M-040	Attachable mechanical stage.
M-099	Polarizing set (filters and rotating table).
M-012	Tungsten bulb 20W/230V (only for M-100FL).
M-013	Halogen bulb 12V/10W, with dichroic mirror (only for M-100FL-H).
M-971	Plane-concave mirror, with base.
DC-001	Plastic dust cover, small.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
15008	OPTIKA immersion oil 10ml.
M-069	Solar battery pack (only for M-100FLed).
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR B-50

M-001	Eyepiece H5x.
M-002.1	Eyepiece WF10x/18mm.
M-003	Eyepiece WF16x/12mm.
M-004	Eyepiece with micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF10x/18mm.
M-131	ACH (Achromatic) objective 4x/0.10.
M-132	ACH (Achromatic) objective 10x/0.25.
M-134	ACH (Achromatic) objective 40x/0.65.
M-040	Attachable mechanical stage.
M-099	Polarizing set (filters and rotating table).
DC-001	Plastic dust cover, small.
M-069	Solar battery pack.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR DM-5 - DM-5UP

M-044	Eyepiece with pointer WF10x/16mm.
M-727	ACH (Achromatic) objective 4x/0.10.
M-728	ACH (Achromatic) objective 10x /0.25.
M-729	ACH (Achromatic) objective 40x/0.65.
M-069	Solar battery pack (only for DM-5UP).
DC-001	Plastic dust cover, small.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.



How to connect the cameras to our microscopes.

Please refer to the Adapter reference list on Digital section.

M-069 - Solar battery pack

Included battery: rechargeable – Lithium-Poly. Capacity: 2600 mAh.
Output voltage: 5.5Vdc. - Dimensions: 120x73x10 mm.
Autonomy: over 6 hours at medium intensity (X-LED³).
Charging modes: with solar panel (12h),
with external USB power supply (not included)
or from PC USB port (5h).



15104 - Cleaning kit

It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.



Headquarters and Manufacturing Facilities

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B-150 Series



Biological Microscopes For Students

B-151 / B-151ALC / B-151R / B-153 / B-153ALC / B-153R / B-155 / B-155ALC / B-155R / B-157 / B-157ALC / B-157R /
B-159 / B-159ALC / B-159R / B-150POL-M / B-150POL-MALC / B-150POL-MR / B-150POL-B / B-150POL-BALC /
B-150POL-BR / B-150DM / B-150DMR / B-150DB / B-150DBR

Perfect For Student's First Experience With A Microscope

DESIGNED FOR NOVICE USERS

- » Extremely reliable microscopes for education
- » Particularly recommended for primary school
- » Ideal for biology and material science

BIOLOGICAL EDUCATIONAL MICROSCOPES

- » Choose among monocular and binocular heads
- » 18mm field number
- » Achromatic lenses for standard applications



Attention To Detail

HANDY, YET EXTREMELY STABLE

- » Compact, practical and intuitive to use
- » Optics ensuring good quality images
- » Get impressive images and live videos with cameras

EASY TO TAKE CARE OF

- » Sturdy, durable for extended lifetime
- » Only simple lens cleaning is required time to time
- » Dust cover protects from environmental contaminants



Suitable For Field Use

CORDLESS, EASILY TRANSPORTABLE

- » Stable, yet compact and light weight
- » Long-lasting, 8-15h operating time
- » Can be transported for being used on site

NO NEED FOR POWER CONNECTION

- » Powered by rechargeable battery (R models)
- » Optional solar battery pack
- » Always ready to work



ALC – Only Available At OPTIKA

3-STEPS EASY SETTING

- » Choose the light intensity you prefer
- » Press the button and set the light
- » Change the objectives or close the diaphragm aperture: the microscope will keep the same light intensity!

AUTOMATIC LIGHT CONTROL & ADJUSTMENT

- » When another objective is used
- » When the aperture diaphragm changes
- » When processing another sample with different opacity

STEP 1

Set the brightness according to your preferences.



STEP 2

Press the ALC button to save the brightness level.



STEP 3

Forget about the illumination!

The microscope will automatically adjust the brightness for you, in case of:

- Another objective is used
- The diaphragm aperture is changed
- Another specimen with different opacity is processed



Regulation of diaphragm aperture

B-150 Series

Incorporating The Most Wanted Features In A Student Microscope

Get all the controls and features common to higher level microscopes: translating stage, binocular head, coaxial focus knob, adjustable condenser, and 1000x maximum magnification. An extremely simple but well-equipped solution, in a modern and ergonomic design.

The Most Comprehensive Series Dedicated to Students

B-150 comes in a variety of models to meet your needs. Standard brightfield, models with internal rechargeable batteries (R Models), with automatic light control (ALC Models), a version ready for polarization analysis (POL Models), and models with built-in camera (D Models) for image acquisition.

LED With Rechargeable Battery - Optimized Illumination

Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb.

R Models have internal rechargeable battery for up to 15 hours (at medium intensity) of outdoor use. All other models can be equipped with the optional external solar battery pack.



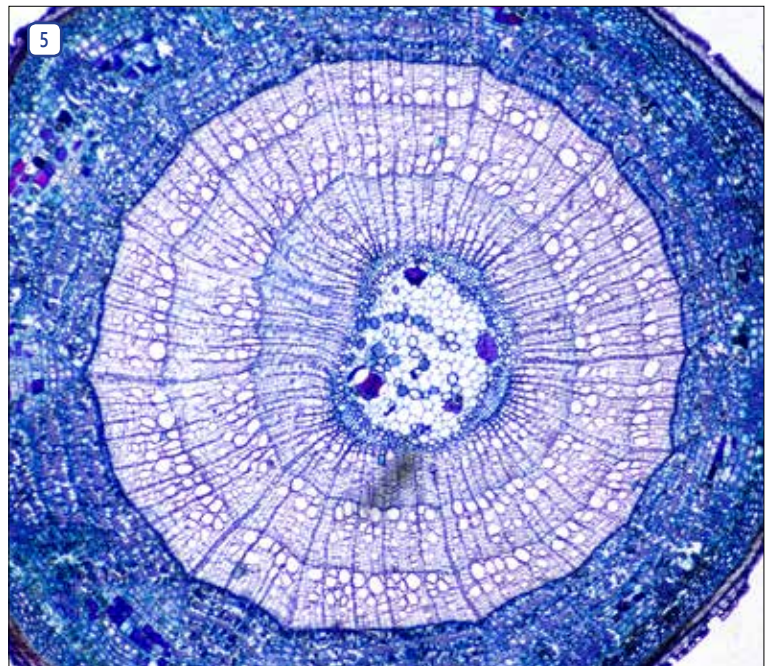
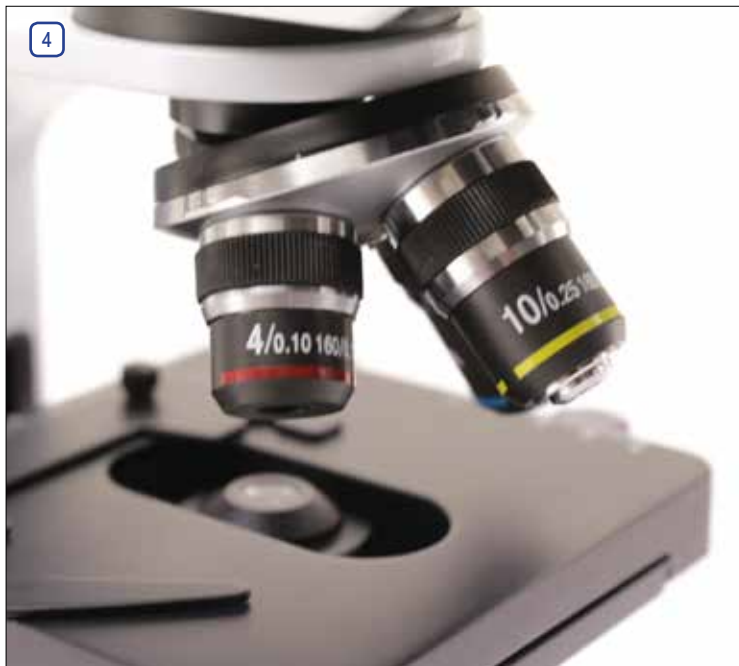
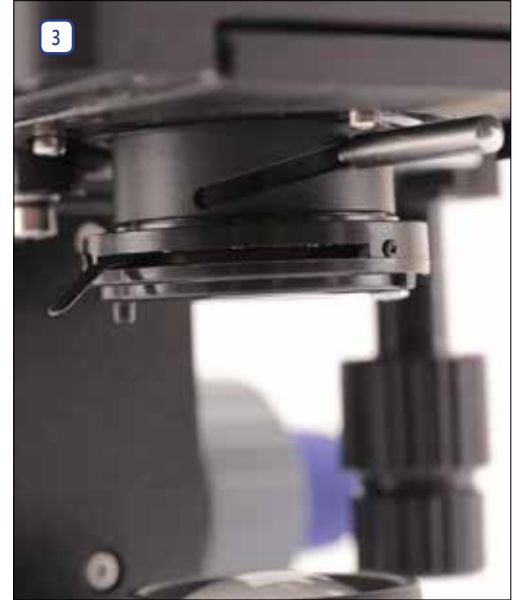
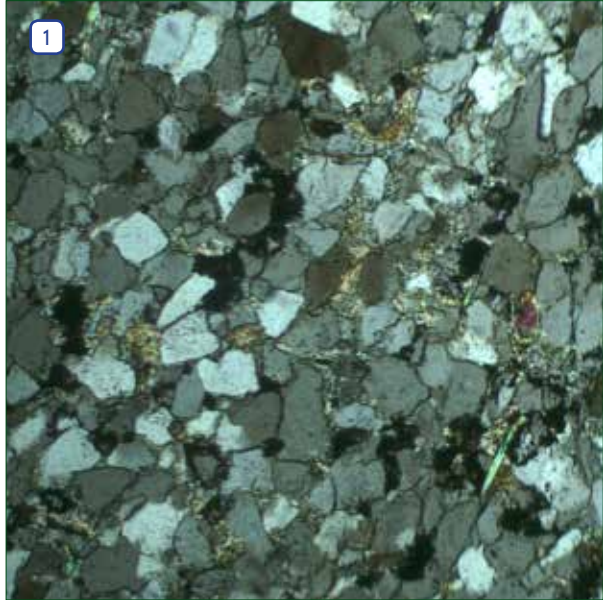
ALC - Automatic Light Control, Only Available At OPTIKA

Incomparable Comfort With The Exclusive Automatic Light Control (ALC)

The intensity of the light is automatically adjusted by the microscope itself in order to maintain the same level as the one the user has previously chosen. No matter if the aperture of the diaphragm changes, if another objective is used, and if the opacity of the sample is different... the microscope will set the light for you according to your preferences.

On **ALC Models**.

Biological Microscopes For Students



Legend

1. Polarized light observation of quartzite with B-150POL-M and 10x objective.
2. Monocular polarizing microscope B-150POL-M during on-site use.
3. B-150 adjustable condenser to concentrate light from the illumination source.
4. Three achromatic objectives (4x, 10x, 40x) of B-151 ensuring great viewing experience.
5. Brightfield observation of tilia three-year stem with B-159 and 20x objective.

B-150 Series - Overview

The B-150 series has been designed to fulfill all requirements of educational laboratories.

Obtain clear images at three (40x, 100x and 400x) or four (40x, 100x, 400x and 600x or 1000x) magnifications with 18mm field number.

All in a compact and easy to carry size. The entire series is equipped with 1W LED illumination for bright and uniform light.

If a cordless microscope is needed, the R Models are your choice as they come with a rechargeable battery.



Observation mode:

Brightfield, polarization.

Heads:

Monocular and binocular, 30° inclined.

360° rotating heads on all the models, except for ALC ones.

Interpupillary distance:

Adjustable between 48 and 75 mm.

Dioptric adjustment:

On the left eyepiece.

Eyepieces:

WF10x/18 mm.

Nosepiece:

Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

Achromatic (different magnifications available) with an anti-fungus treatment.

Specimen stage:

B-151 models:

Fixed stage, 130x120mm.

B-153 / B-155 / B-157 / B-159 and B-150D models:

Mechanical stage, 126x116mm, 70x30mm X-Y movement range.

Vernier scale on the two axes, accuracy: 0.1mm.

B-150POL models:

Rotatable round stage, 120mm diameter.

Focusing:

Coaxial coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Adjustable tension of coarse focusing knob.

Condenser:

B-151 models:

N.A. 0.65, pre-centered, fixed with iris diaphragm.

B-153 / B-155 / B-157 / B-159 models:

N.A. 1.2, pre-centered, adjustable height with iris diaphragm.

B-150POL models:

N.A. 1.2, pre-centered, fixed with iris diaphragm.

B-150D models:

N.A. 1.2, pre-centered, adjustable height with iris diaphragm.

Illumination:

1W white LED with light intensity control.

Color temperature: 6.300K.

B-150 Series - Range

B-151



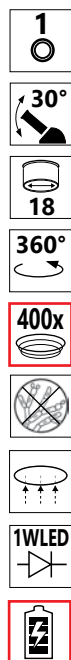
Entry level model with fixed stage and **efficient LED illumination**.

B-151ALC



Entry level model with the **exclusive ALC technology for Automatic Light Control**, fixed stage and efficient LED illumination.

B-151R



Entry level model with rechargeable battery for **very long outdoor operation up to 15 hours**. Equipped with fixed stage and efficient LED illumination.



Three achromatic objectives included for a great viewing experience:
4x, N.A. 0.10, W.D. 18 mm
10x, N.A. 0.25, W.D. 7 mm
40x, N.A. 0.65, W.D. 0.53 mm

B-150 Series - Range

B-153



Up to **600x** total magnification with a precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage.

B-153ALC



Equipped with the **exclusive ALC technology for Automatic Light Control**, it allows up to **600x** total magnification. Precise and accurate positioning of the slide thanks to smooth movement of the stage.

B-153R



Entry-level model with monocular head and double-layer mechanical stage. Up to **600x** total magnification.
Internal rechargeable battery guarantees a very long time (up to 15 hours) of outdoor use.



Four achromatic objectives included for a great viewing experience:

4x , N.A. 0.10, W.D. 18 mm	10x , N.A. 0.25, W.D. 7 mm
40x , N.A. 0.65, W.D. 0.53 mm	60x , N.A. 0.85, W.D. 0.45 mm

B-150 Series - Range

B-155



Up to **1000x** total magnification with a precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage.

B-155ALC



Equipped with the **exclusive ALC technology for Automatic Light Control**, it allows up to **1000x** total magnification. Precise and accurate positioning of the slide thanks to smooth movement of the stage.

B-155R



Equipped with **rechargeable battery** for very long outdoor operation of up to 15 hours. It allows precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage and **1000x** as maximum magnification.



Four achromatic objectives included for a great viewing experience:

4x , N.A. 0.10, W.D. 18 mm	10x , N.A. 0.25, W.D. 7 mm
40x , N.A. 0.65, W.D. 0.53 mm	100x (oil), N.A. 1.25, W.D. 0.13 mm

B-150 Series - Range

B-157



Up to **600x** total magnification with a precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage.

B-157ALC



Equipped with the **exclusive ALC technology for Automatic Light Control**, it allows up to **600x** total magnification. Precise and accurate positioning of the slide thanks to smooth movement of the stage.

B-157R



Equipped with **rechargeable battery** for very long outdoor operation of up to 15 hours. It allows precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage and **600x** as maximum magnification.



Four achromatic objectives included for a great viewing experience:

4x , N.A. 0.10, W.D. 18 mm	10x , N.A. 0.25, W.D. 7 mm
40x , N.A. 0.65, W.D. 0.53 mm	60x , N.A. 0.85, W.D. 0.45 mm

B-150 Series - Range

B-159



Up to **1000x** total magnification with a precise and accurate positioning of the slide thanks to smooth movement of the mechanical stage.

B-159ALC



Equipped with the **exclusive ALC technology for Automatic Light Control**, it allows up to **1000x** total magnification. Precise and accurate positioning of the slide thanks to smooth movement of the stage.

B-159R



Equipped with **rechargeable battery** for very long outdoor operation of up to 15 hours. It allows **1000x** as maximum magnification and precise, accurate positioning of the slide thanks to smooth movement of the stage.



Four achromatic objectives included for a great viewing experience:

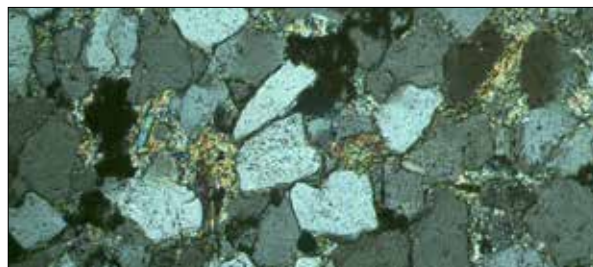
4x , N.A. 0.10, W.D. 18 mm	10x , N.A. 0.25, W.D. 7 mm
40x , N.A. 0.65, W.D. 0.53 mm	100x (oil), N.A. 1.25, W.D. 0.13 mm

B-150 Series - Range

B-150POL models are suitable for common observations with **polarized light** in the educational field, the microscopes are designed for simple polarization analysis, with swing-out polarizer, slide-out analyzer and rotating stage. Entry-level instruments for polarization analysis of birefringent samples, such as rock sections, minerals, fibers, transparent plastics, biological samples (e.g. bone sections).



Brightfield observation of Quartzite with B-150POL-M and 10x objective



Polarized light observation of Quartzite with B-150POL-B and 10x objective

B-150POL-M



Monocular standard configuration, equipped with all you need for an accurate **polarizing** analysis.



Binocular standard configuration, equipped with all you need for an accurate **polarizing** analysis.

B-150 Series - Range

B-150POL-MALC

1

30°

18

400x

1WLED

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control



Monocular microscope with **ALC technology** for Automatic Light Control and equipped with all you need for accurate **polarizing** analysis.

B-150POL-BALC

2

30°

18

400x

1WLED

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control



Binocular microscope with **ALC technology** for Automatic Light Control and equipped with all you need for accurate **polarizing** analysis.

B-150POL-MR

1

30°

18

360°

400x

1WLED

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control



Monocular polarizing microscope with **rechargeable battery** for long outdoor operation of up to 15 hours.

B-150POL-BR

2

30°

18

360°

400x

1WLED

Automatic Light Control

Automatic Light Control

Automatic Light Control

Automatic Light Control

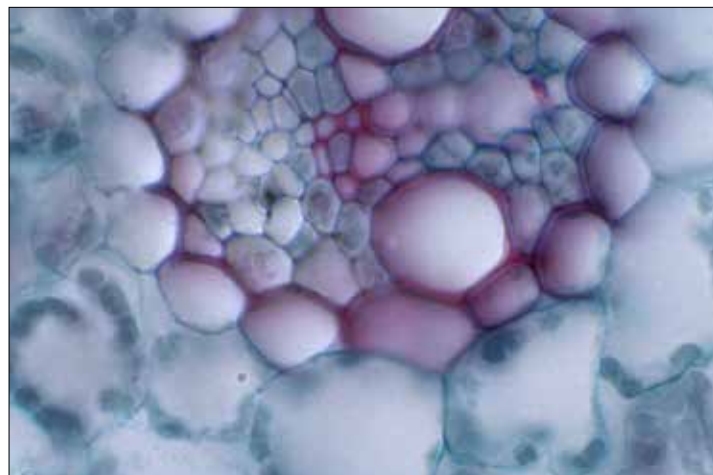
Automatic Light Control



Binocular polarizing microscope with **rechargeable battery** for long outdoor operation of up to 15 hours.

B-150 Series - Range

B-150D models provide the best solution for interactive trainings, with the integration of a **digital camera** and everything necessary in a ready to use solution. If a cordless microscope is needed, the R Models are your choice as they come with a rechargeable battery. These microscopes allow to easily capture pictures and videos of all kinds of sample prepared on standard glass slides.



Brightfield observation of dicotyledonous leaves with B-150DB and 100x objective

B-150DM



Entry-level model with monocular head and double-layer mechanical stage. **Built-in camera with 1.3MP resolution.**

B-150DMR



Entry-level model with monocular head and double-layer mechanical stage. **Built-in camera with 1.3MP resolution. Internal rechargeable battery** guarantees a very long time (up to 15 hours) of outdoor use.

B-150 Series - Range

B-150DB

- 2
- 30°
- 18
- 360°
- 1000x
-
-
- 1WLED
- USB
- 3 MP
-



B-150DBR

- 2
- 30°
- 18
- 360°
- 1000x
-
-
- 1WLED
- USB
- 3 MP
-
-



Equipped with **built-in camera with 3MP resolution**, double-layer mechanical stage and efficient LED illumination.

Rechargeable battery ensures very long outdoor operation of up to 15 hours, with **built-in camera with 3MP resolution**, double-layer mechanical stage and efficient LED illumination.



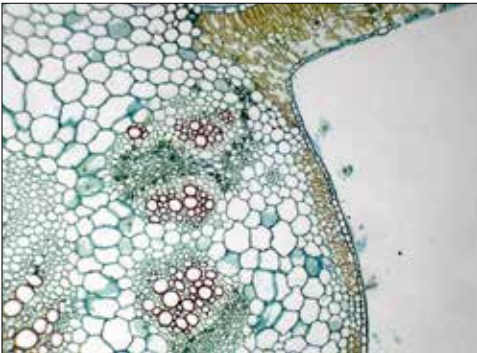
B-150 Series - B-150D Camera specifications

B-150DM		B-150DB
Resolution	1280x1024 pixels (1.3Mp)	2048x1536 pixels (3.14Mp)
Sensor	1/3.2"CMOS	1/2.5"CMOS
Pixel size	2.8x2.8 μm	2.2x2.2 μm
Resolution & Frame Rate	1280x1024 - 15 fps	2048x1536 - 4 fps
	640x480 - 30 fps	1280x1024 - 8 fps
		640x480 - 30 fps
Sensitivity	1.0 V/Lux-sec	1.0 V/Lux-sec
White Balance	Auto / Manual	Auto / Manual
S/N Ratio	≥ 42 dB	≥ 40 dB
Dynamic Range	≥ 71 dB	≥ 66 dB
Digital Port	USB 2.0	USB 2.0
Imaging Software	OPTIKA Vision Lite	OPTIKA Vision Lite
System Requirements	Operating system: Windows XP, Vista, Win7, Win8, Win10, 32-64 bit	

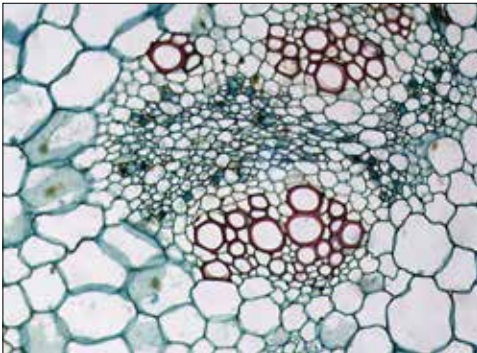
B-150 Series - Optical performance

Eyepiece			10x (M-002.1)		16x (M-003)	
Field number (mm)			18		12	
Objective	N.A.	W.D. (mm)	Total magnification	Field number (mm)	Total magnification	Field number (mm)
4x	0.1	18	40x	4.5	64x	3
10x	0.25	7	100x	1.8	160x	1.2
20x	0.4	2	200x	0.9	320x	0.6
40x	0.65	0.53	400x	0.45	640x	0.3
60x	0.8	0.45	600x	0.3	960x	0.2
100x	1.25 (oil)	0.13	1000x	0.18	1600x	0.12

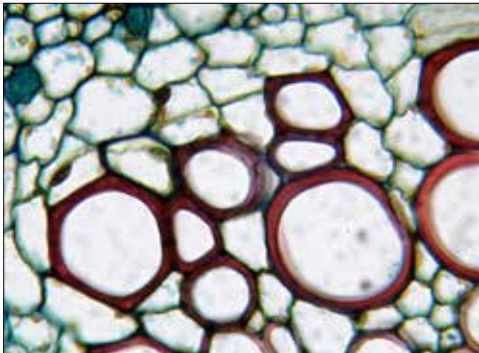
B-150 Series - Zoom comparison



Monocot and dicot - B-157 - 4x objective



Monocot and dicot - B-157 - 10x objective



Monocot and dicot - B-157 - 40x objective

B-150 Series - Comparison chart

[illegible]

B-150 Series - Accessories

ACCESSORIES FOR B-150 SERIES

M-002.1	Eyepiece WF10x/18mm.
M-003	Eyepiece WF16x/12mm.
M-004	Eyepiece with micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF10x/18mm.
M-137	ACH (Achromatic) objective 4x/0.10.
M-138	ACH (Achromatic) objective 10x/0.25.
M-139	ACH (Achromatic) objective 20x/0.40.
M-141	ACH (Achromatic) objective 40x/0.65.
M-142	ACH (Achromatic) objective 60x/0.80.
M-143	ACH (Achromatic) objective 100x/1.25 (Oil).
M-040	Attachable mechanical stage (only for B-151 models).
M-155	Polarizing set (filters only).
M-972	Plane-concave mirror, with base.
DC-002	Plastic dust cover, medium.
M-069	Solar battery pack.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15008	OPTIKA immersion oil 10ml.
15104	Cleaning kit.

M-069 - Solar battery pack

Included battery: rechargeable – Lithium-Poly. Capacity: 2600 mAh.
Output voltage: 5,5Vdc. - Dimensions: 120x73x10 mm.
Autonomy: over 6 hours at medium intensity (X-LED³).
Charging modes: with solar panel (12h),
with external USB power supply (not included)
or from PC USB port (5h).

Not compatible with R models.



15104 - Cleaning kit

It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.



How to connect the cameras to our microscopes.

Please refer to the Adapter reference list on Digital section.

Headquarters and Manufacturing Facilities

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B-190 Series



Advanced Biological Microscopes For Students

B-191 / B-191s / B-192 / B-192s / B-193 / B-190TB

Fulfill the Next Generation Learning Challenges

FOR SKILLFUL STUDENTS AND CLASSROOM USE

- » Extremely reliable microscopes
- » Particularly recommended for primary school
- » Ideal for education and biology

YOUR FAVOURITE EDUCATIONAL MICROSCOPES

- » Choose among monocular, binocular and trinocular heads
- » 18mm field number
- » Achromatic lenses for standard brightfield applications.



B-190TB - A Completely New, Revolutionary Experience

HANDY, YET EXTREMELY STABLE

- » Get accurate, dependable results in one click
- » Equipped with the most reliable OS, Windows 10
- » Holding solution for open discussion, 360° rotating and tilting

OPTIMUM AND UNPARALLELED COMFORT IN USE

- » Large touch screen of 10.1" with fast, responsive and smooth control
- » Simultaneous camera and power connection for long-term operation
- » Easily detachable, can be used as a laptop (keyboard included)



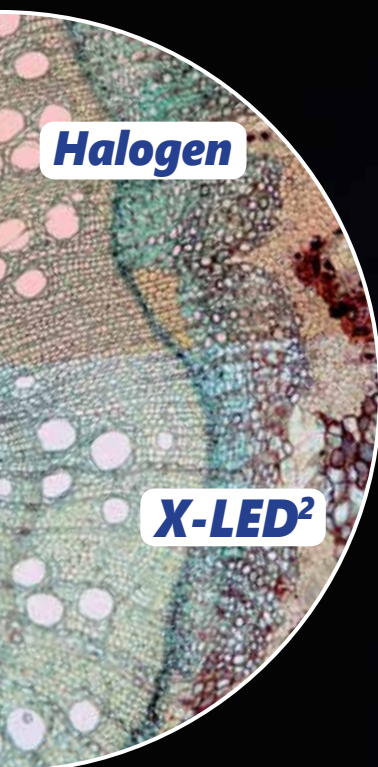
X-LED² – Only Available At OPTIKA

POWERFUL AND UNIFORM ILLUMINATION

- » Uncomparable light intensity, exclusive lens and collector design
- » Constant pure-white colour temperature at all intensity levels
- » Unmatched colour fidelity and brightness of your specimen

MONEY & ENERGY SAVING

- » High energy efficiency at a limited cost
- » Incredibly low energy consumptions, only 3W
- » LED long lifetime (50.000 hours = 20 years at 8 hours/day usage)



Attention to Detail

HANDY, YET EXTREMELY STABLE

- » Compact, practical and intuitive to use
- » Optics ensuring good quality images
- » Get impressive images and live videos with cameras

EASY TO TAKE CARE OF

- » Sturdy, durable for extended lifetime
- » Only simple lens cleaning is required time to time
- » Dust cover protects from environmental contaminants



B-190 Series

Original, Compact And Robust

The original design of B-190 series is based on robustness, yet keeping the extreme portability of the instrument, with a dedicated handle on the back. The built-in LED illuminator and the patented version with Windows tablet improve the reliability of one of the best-sellers of OPTIKA in the educational field.



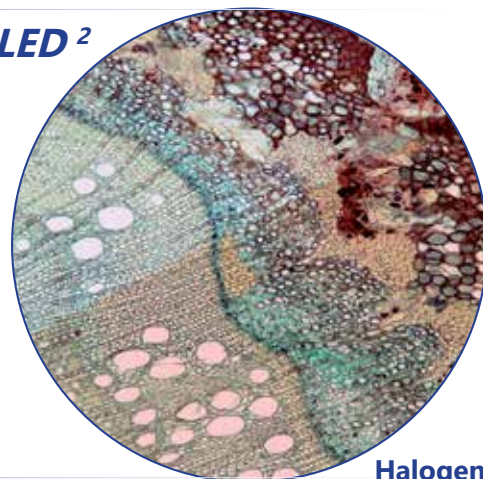
Incorporating The Most Wanted Features In A Student Microscope

Get all the controls and features common to higher level microscopes: translating stage, binocular or trinocular head, coaxial focus knob, adjustable condenser, and 1000x maximum magnification (standard). An extremely simple but well equipped solution, in a modern and ergonomic design.

X-LED² Exclusive Lighting Source

A special design of the lens in front of the LED gives a very high light intensity, while ensuring optimal uniformity of illumination on the whole field number. Relevant money & energy saving thanks to the incredibly low energy consumptions allow you to cut the electricity bills by 90%!
The electric consumption (3W only) proves the high efficiency of this system: incredibly high light intensity combined with low consumption.

X-LED²



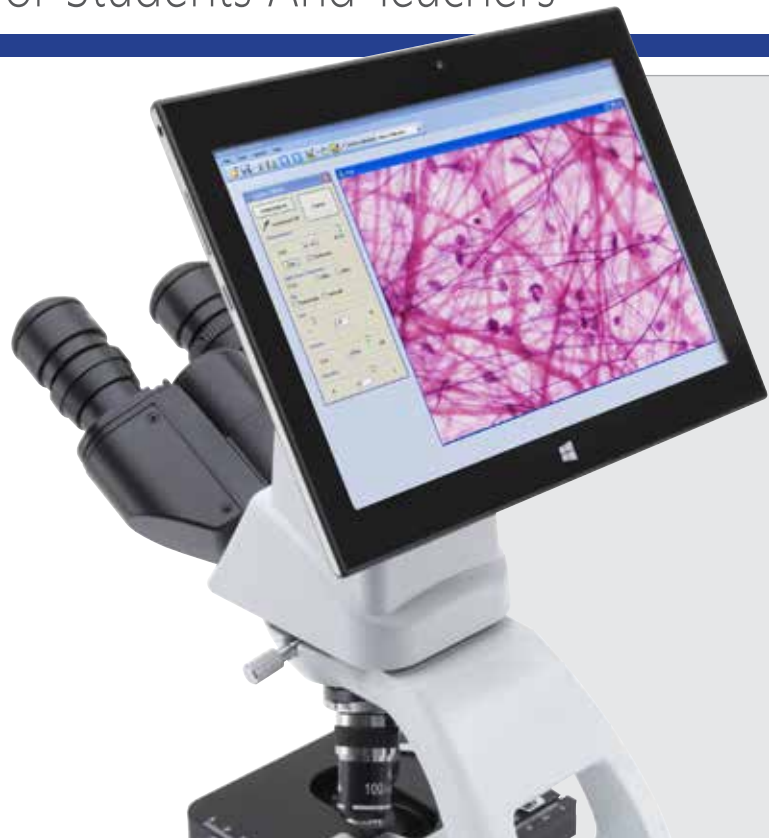
Halogen



Advanced Biological Microscopes For Students And Teachers

Optimum And Unparalleled Comfort In Use

The B-190TB offers you a unique, incomparable solution. It includes a built-in camera of 3Mp and a Windows tablet with large touch screen, for a responsive and smooth control. Simultaneous camera and power connection ensure long-term operation, with dependable results in one click. It provides a reliable and comfortable solution for open discussion: 360° rotating and tilting tablet, easily detachable, that can be used as a laptop.



Get the most out of our accessories

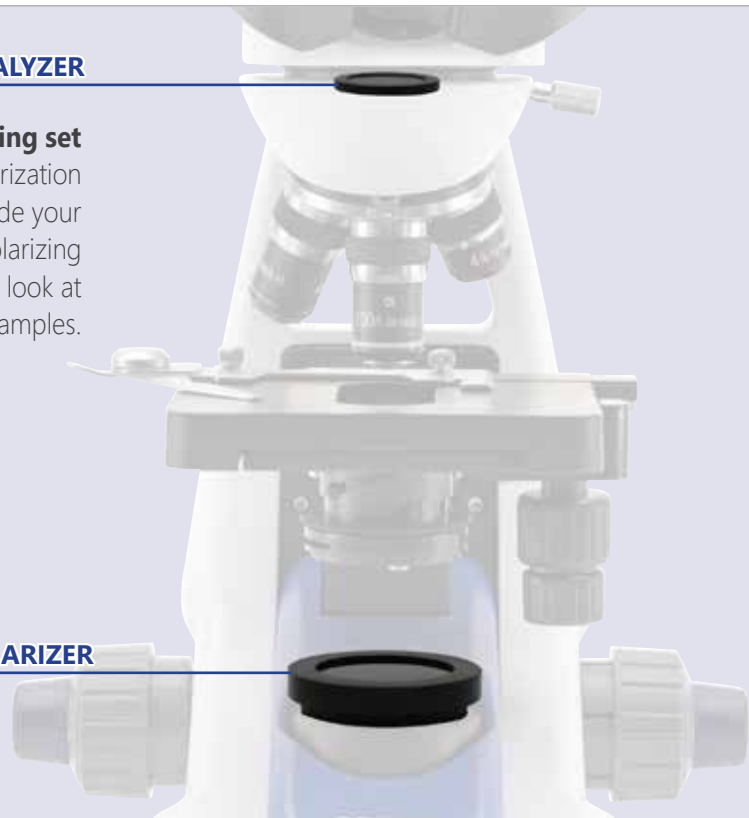
ANALYZER

M-190 - Polarizing set

Set for simple polarization analysis. Upgrade your B-190 to a polarizing microscope and look at birefringent samples.



POLARIZER



B-190 Series

Applications

Some application examples showing the extreme versatility of B-190 Series. Application in education, biology, botany and simple material analysis, where all the samples are prepared on standard glass slides.

Legend

1. B-190 Series lens containing X-LED² illumination system.
2. B-190 Series WF10x/18mm eyepieces for large specimen view and interpupillary adjustment.
3. B-191 pre-centered condenser with achromatic objectives.
4. Frog Blood Smear, with B-192 and 10x objective.
5. Frog Blood Smear, with B-192 and 40x objective.
6. Frog Blood Smear, with B-192 and 100x objective.
7. Frog Blood Smear, with B-192 and 100x objective with water.
8. B-190 Series handle for easy transportation.
9. B-190TB digital microscope with 10.1" Widows tablet PC.
10. B-190 Series adjustable condenser in height.

2

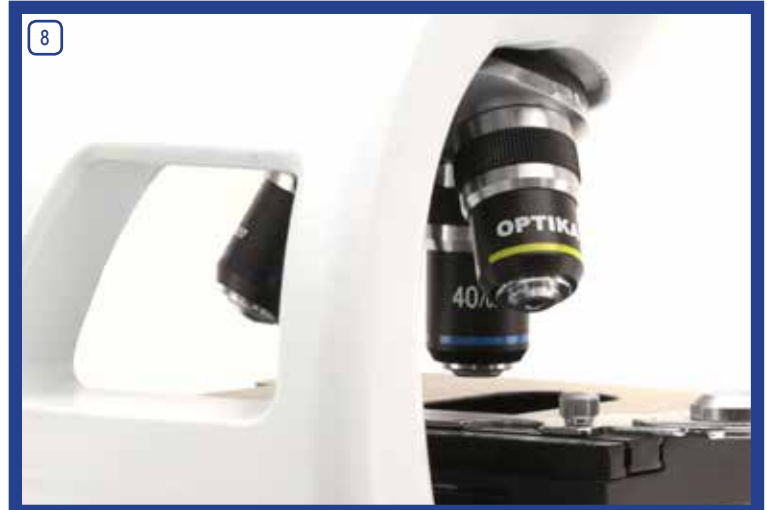
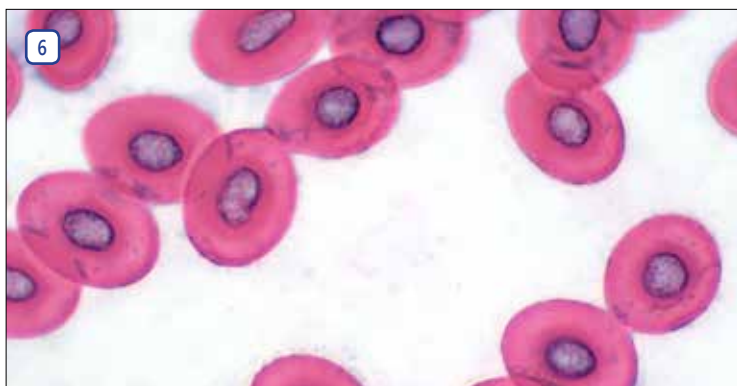
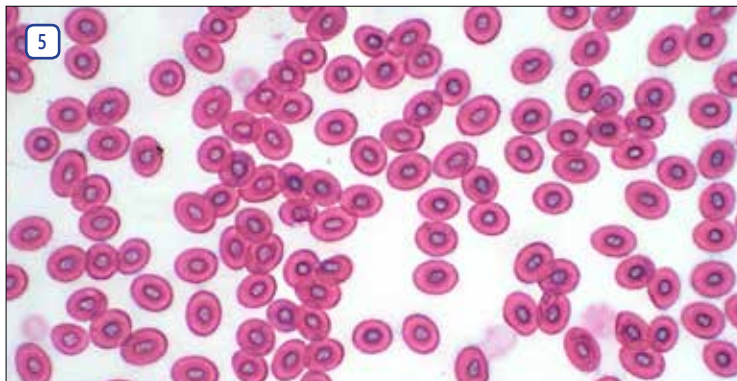
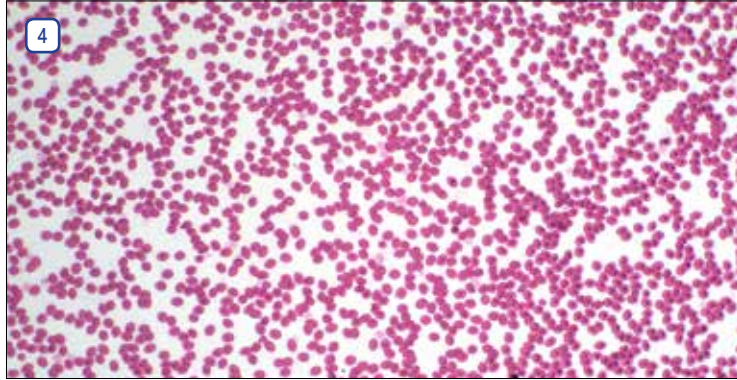


3



1





B-190 Series - Overview

B-190 is the result of a perfect fusion between years of experience in microscopy and a refined design study. It represents our product philosophy at its best: quality, reliability and innovation, all in one. B-190 Series, the answer of OPTIKA Microscopes to the challenge of the future in the educational field.



Observation mode:

Brightfield.

Heads:

B-191 models:

Monocular, 360° rotating and 30° inclined.

B-192 models:

Binocular, 360° rotating and 30° inclined.

B-193:

Trinocular, 360° rotating and 30° inclined.

B-190TB:

Digital model binocular with camera and 10.1" tablet, 360° rotating and 30° inclined.

Interpupillary distance:

B-190TB/B-192 models: Adjustable between 48 and 75 mm.

B-193 model: Adjustable between 55 and 75 mm.

Dioptric adjustment:

On the left eyepiece.

Eyepieces:

WF10x/18 mm.

Nosepiece:

Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

Achromatic (different magnifications available) with an anti-fungus treatment.

Specimen stage:

Double layer mechanical sliding stage, 125x115mm, 70x30mm X-Y movement range. Vernier scale on the two axes, accuracy: 0.1mm.

Focusing:

Coaxial coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Adjustable tension of coarse focusing knob.

Condenser:

N.A. 1.25, pre-centered, adjustable height with iris diaphragm.

Illumination:

X-LED² with white 3W LED and light intensity control.

Color temperature: 6.300K.

B-190 Series - Range

B-191



Entry level model with monocular head up to **1000x** total magnification, mechanical stage and **exclusive X-LED²** for **unmatchable performance**, powerful and uniform illumination.

B-191s



Entry level model with monocular head up to **600x** total magnification, without using immersion oil. The **exclusive X-LED²** provides **unmatchable performance** for powerful and uniform illumination.

B-192



Binocular head with up to **1000x** total magnification, mechanical stage and **exclusive X-LED²** for **unmatchable performance**, powerful and uniform illumination.

B-192S



Binocular head with up to **600x** total magnification without using immersion oil. The **exclusive X-LED²** provides **unmatchable performance** for powerful and uniform illumination.

B-190 Series - Range

B-193

- 3
- 30°
- 18
- 360°
- 1000x
- X-LED²



Trinocular head with up to **1000x** total magnification, mechanical stage and **exclusive X-LED²** for **unmatchable performance for powerful and uniform illumination**.
All the OPTIKA cameras can be easily mounted and used straight away.

B-190TB

- 2
- 30°
- 18
- 360°
- 1000x
- X-LED²
- 10.1"
- 3 MP
- HDMI
- SD
- Wi-Fi
- Bluetooth



3MP Built-in camera and **10.1" Windows tablet PC** up to **1000x** total magnification, mechanical stage and **exclusive X-LED²** for **unmatchable performance for powerful and uniform illumination**.



B-190TB - Digital microscope with camera and tablet

The latest OPTIKA digital microscopes with Windows tablet PC open new microscopy horizons, combining high-end optics with innovative digital technology for microscopic imaging. B-190TB includes a 3MP camera with a 10.1" Windows tablet. View, capture, analyze and share your images with simplicity and reliability.

Detachable

Use it as a laptop PC!
Intel Quad-Core processor, Windows 10.
Battery life up to 10 hours.



PATENTED



**360°
Rotating**



Simultaneous Data & Power Feed

Recommended for schools and long operation, as the tablet can be recharged during use.

Rotating

A special holder allows to easily attach the tablet to the microscope and freely rotate it.

Intuitive, Yet Powerful Software

Simple and user-friendly, ideal for students and experienced users.



B-190TB - Digital microscope with camera and tablet

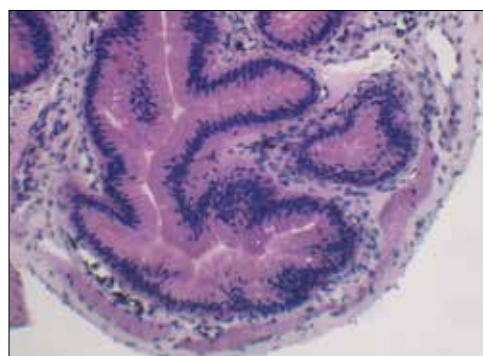


TABLET TECHNICAL SPECIFICATIONS	
Model	Tablet 10.1"
Operating System	Windows 10 32-bit
Language	Multilanguages already installed
Image capturing software	OPTIKA Vision lite
CPU	Intel® Atom™ Z3735F, Quad core
CPU speed	1,83 GHz
Graphics Card	Intel® HD Graphics 3D Accelerator
Memory	Ram 2,048 GB DDR3L
LCD display	LED 10.1" IPS Multi Touch Screen
LCD resolution	1280 x 800, 16/10 (WXGA)
Storage	HDD 32GB
Network	Wireless, Bluetooth 4.0
Input/output ports	Micro USB-B - USB - Microphone - MicroSD card reader - Mini HDMI - Head-phone
Control Buttons	Auto rotate off, volume control
Battery Technology	Lithium-ion battery, 2x cell
Battery capacity	6000 mAh
Max load	18 W
Dimensions	Thickness 10,5 mm, Height 17,4 cm, Width 25,7 cm
Weight	600 g
Cables included	OTG cable (Micro USB-B to USB-A)
Also included	Instruction manual, Keyboard with touchpad, touch pen.
CAMERA TECHNICAL SPECIFICATIONS	
Digital camera resolution	3.14 MegaPixels
Signal output	USB 2.0
Sensor Size	1/2.5"
Sensor technology	CMOS
Image format	4\3
Full Image size	2048 x 1536
Pixel size	2.2 x 2.2 micron
Frame rate full resolution	5 frames\sec
Frame rate other resolutions	8 FPS (1280x1024) - 30FPS (640x480)
Automatic White Balance	Auto - Man
Automatic Gain Control	Auto - Man
Automatic Back light control	Auto - Man
Exposure control	Auto - Man

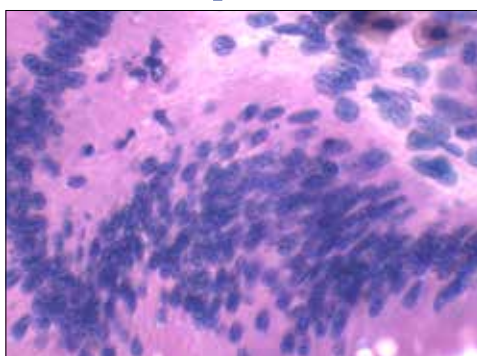
B-190 Series - Optical performance

Eyeiece			10x (M-002.1)		16x (M-003)	
Field number (mm)			18		12	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
4x	0.1	18	40x	4.5	64x	3
10x	0.25	7	100x	1.8	160x	1.2
20x	0.4	2	200x	0.9	320x	0.6
40x	0.65	0.53	400x	0.45	640x	0.3
60x	0.85	0.45	600x	0.3	960x	0.2
100x	1.25 (oil)	0.13	1000x	0.18	1600x	0.12

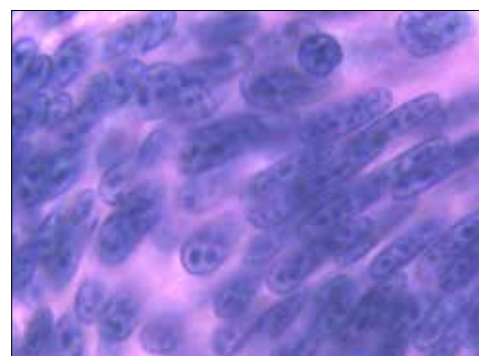
B-190 Series - Zoom comparison



Frog small intestine - B-193 - 10x objective



Frog small intestine - B-193 - 40x objective



Frog small intestine - B-193 - 100x Oil objective

B-190 Series - Comparison chart

Model	Head	Eyepieces	Nosepiece	Objectives	Stage	Focusing	Condenser	Illuminator
B-191	Monocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 100x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity
B-191s	Monocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 60x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity
B-192	Binocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 100x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity
B-192s	Binocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 60x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity
B-193	Trinocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 100x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity
B-190TB	Binocular, digital 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	Achromatic 4x, 10x, 40x, 100x	Double layer, 125x115 mm with 70x30mm X-Y moving range	Coaxial coarse and fine focusing	N.A. 1.25 Abbe type with adjustable height and iris diaphragm	3W X-LED ² system with adjustable intensity

B-190 Series - Accessories

ACCESSORIES FOR B-190 SERIES

M-001	Eyepiece H5x.
M-002.1	Eyepiece WF10x/18mm.
M-003	Eyepiece WF16x/12mm.
M-004	Eyepiece with micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF10x/18mm.
M-137	ACH (Achromatic) objective 4x/0.10
M-138	ACH (Achromatic) objective 10x/0.25.
M-139	ACH (Achromatic) objective 20x/0.40.
M-141	ACH (Achromatic) objective 40x/0.65.
M-142	ACH (Achromatic) objective 60x/0.80.
M-143	ACH (Achromatic) objective 100x/1.25 (Oil).
M-190	Polarizing set (filters only).
DC-002	Plastic dust cover, medium.
M-069	Solar battery pack.
M-974	Blue filter, 32 mm diameter.
M-976	Green filter, 32 mm diameter.
M-978	Yellow filter, 32 mm diameter.
M-988	Frosted glass filter, 32 mm diameter.
M-971	Plane-concave mirror, with base.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
15008	OPTIKA immersion oil 10ml.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.
VP-190	IQ/OQ/PQ Validation Protocols.

M-069 - Solar battery pack

Included battery: rechargeable – Lithium-Poly. Capacity: 2600 mAh.
Output voltage: 5,5Vdc. - Dimensions: 120x73x10 mm.
Autonomy: over 6 hours at medium intensity (X-LED³).
Charging modes: with solar panel (12h),
with external USB power supply (not included)
or from PC USB port (5h).



B-192 Powered by solar battery pack (M-069)

15104 - Cleaning kit

It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.



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STEREO Series



Entry Level Stereomicroscopes For Students

MS-2 / STX / S-10-P / S-10-L / S-10-2L / S-20-L / S-20-2L / ST-30B-2L / ST-30-2LR / ST-30-2LF / ST-30-2Led
ST-30-2LedR / ST-40B-2L / ST-40-2L / ST-45-2L / ST-50Led

A Range Of Quality Students Microscopes

DESIGNED FOR NOVICE USERS

- » Extremely reliable microscopes
- » Particularly recommended for primary school
- » Ideal for education, biology and material science

EDUCATIONAL STEREOMICROSCOPES

- » Choose among monocular and binocular heads
- » Up to 20mm field number
- » Available also with LED illumination



Attention To Detail

HANDY, YET EXTREMELY STABLE

- » Compact, practical and intuitive to use
- » Optics ensuring good quality images
- » Get impressive images and live videos with cameras

EASY TO TAKE CARE OF

- » Sturdy, durable for extended lifetime
- » Only simple lens cleaning is required time to time
- » Dust cover protects from environmental contaminants



STEREO Series

Greenough Optical System

The V-shape optical path of Greenough allows us to design a very compact and a slim unit, highly versatile and appreciated for the 3D viewing. Vertical heads or 45° inclined to grant comfortable posture to the user even after several hours of operation.

Incorporating the Most Wanted Features in a Student Microscope

These instruments are the best way to enter the world of magnified 3D vision of objects such as insects, rocks, plants, and many other samples. The binocular head ensures a comfortable view. Optional eyepieces and objectives allow to increase even further the maximum magnification.



LED with Rechargeable Battery - Optimized Illumination

Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb.

ST-30-2Led and **ST-30-2LedR** have internal rechargeable battery for up to 15 hours (at medium intensity) of outdoor use.

360° Rotating heads

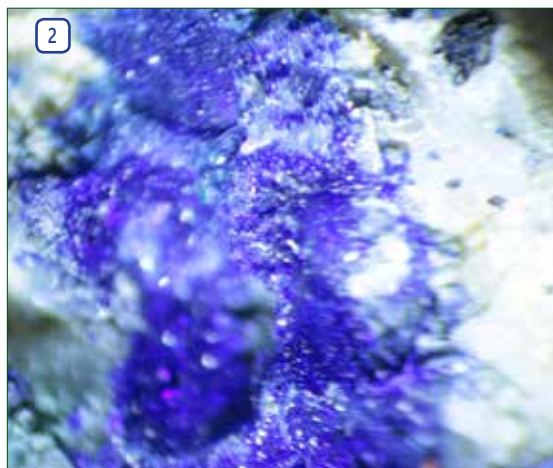
MS-2, **ST-40-2L**, **ST-40B-2L** and **ST-45-2L** have a 360° rotating head, for the most comfortable teaching experience. The head, through rotation, can be shared among different users or adjusted to the user position.

LWD - Long Working Distance

ST-50Led has a special objective with long working distance that allows you to inspect bulky samples, thanks also to its overhanging arm stand and LED flexible incident light.



Entry Level Stereomicroscopes For Students



Legend

1. ST-40-2L during on-site use
2. Mineral rock, with ST-40-2L and 4x objective.
3. ST-30-2Led in use.
4. Fly, with ST-30-2Led and 4x objective.
5. Mineral rock, with ST-45-2L and 4x objective.
6. Coin, with ST-30-2LedR and 4x objective.

STEREO Series - Overview

This series includes a wide selection of stereomicroscopes designed to satisfy every need in both teaching and amateur fields. The whole range, from MS-2 to ST-50LED, is assembled according to the best technical standards.

**Observation mode:**

Brightfield.

Heads:

Binocular heads (except for monocular MS-2 model).

45° inclined (except for STX, S-10-P, S-10-L and S-10-2L models that have vertical heads).

MS-2, ST-40B-2L, ST-40-2L and ST-45-2L:

360° rotating heads.

Interpupillary distance:

Adjustable (for binocular heads).

Dioptric adjustment:

On the left eyepiece (except for S-10 models on the right).

MS-2 and STX without dioptric adjustment.

Eyepieces:

WF10x/16 mm or WF10x/20 mm.

Objectives:

Achromatic different magnifications available with an anti-fungus treatment.

Stand:**STX and ST-45-2L:**

Pillar stand with fixed head holder.

ST-50Led:

Overhanging stand without clips.

All the other models:

Pillar stand.

Focusing:

Every model is equipped with focus adjustment knobs located on each side of the stand.

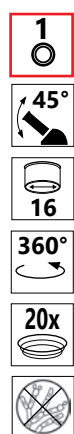
Illumination:

Without illumination, with incident light only or with both incident and transmitted light. Tungsten bulb and LED options.

OPTIKA

STEREO Series - Range

MS-2



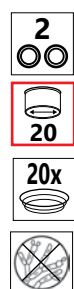
Monocular head, fixed objective (2x), without illumination but can be combined to external illuminators.

STX



Equipped with vertical, binocular head, fixed objective (2x) and **LED incident illumination**, combining **bright and uniform illumination** with **low consumption**. Powered by batteries AA type (not included).

S-10-P



Equipped with vertical, binocular head, **20mm field number** and fixed objective (2x). No illumination, it can be combined to external illuminators.

S-10-L



Equipped with vertical, binocular head, **20mm field number**, fixed objective (2x) and **tungsten incident illumination**.

STEREO Series - Range

S-10-2L



Equipped with vertical, binocular head, **20mm field number**, fixed objective (2x), and **tungsten incident and transmitted illumination**.

S-20-L



45° inclined binocular head, **20mm field number**, fixed objective (2x), and **tungsten incident illumination**.

S-20-2L



45° inclined binocular head, **20mm field number**, fixed objective (2x) and **tungsten incident and transmitted illumination**.

ST-30B-2L



45° inclined binocular head, **20mm field number**, **two selectable objectives (1x and 3x)** tungsten incident and transmitted illumination.

STEREO Series - Range

ST-30-2LR



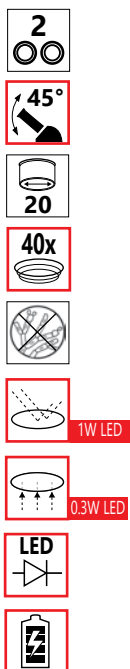
Backwards 45° inclined binocular head, 20mm field number, two selectable objectives (2x and 4x), tungsten incident and transmitted illumination.

ST-30-2LF



45° inclined binocular head, 20mm field number, two selectable objectives (2x and 4x), and tungsten incident and transmitted illumination.

ST-30-2Led



45° inclined binocular head, 20mm field number, two selectable objectives (2x and 4x), LED incident and transmitted illumination, combining bright and uniform illumination with low consumption. Equipped with internal rechargeable battery, guarantees a very long time (up to 12 hours) of outdoor use.

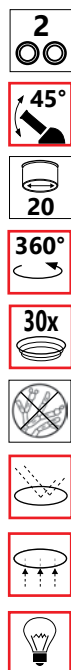
ST-30-2LedR



Backward 45° inclined binocular head, 20mm field number, two selectable objectives (2x and 4x), LED incident and transmitted illumination, combining bright and uniform illumination with low consumption. Equipped with internal rechargeable battery, guarantees a very long time (up to 12 hours) of outdoor use.

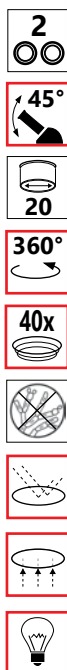
STEREO Series - Range

ST-40B-2L



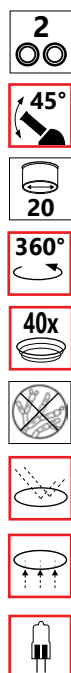
45° inclined binocular head, 360° rotation, 20mm field number, two selectable objectives (1x and 3x), tungsten incident and transmitted illumination.

ST-40-2L



45° inclined binocular head, 360° rotation, 20mm field number, two selectable objectives (2x and 4x), tungsten incident and transmitted illumination.

ST-45-2L



45° inclined binocular head, 360° rotation, 20mm field number, two selectable objectives (2x and 4x), halogen incident and transmitted illumination.

ST-50Led



45° inclined binocular head, 20mm field number, fixed objective (2x), swiveling LED incident illumination on an overhanging, flexible arm. Ideal for long working distance (119 mm with standard 2x objective, 165 mm with ST-025, 124 mm with ST-026).

STEREO Series - Comparison chart

Model	Head	Eyepieces	Objectives	Stand	Illumination
MS-2	Monocular, 360° rotating, 45° inclined	Wide Field 10x/16mm	Fixed 2x	Pillar	Without illumination
STX	Binocular, fixed, vertical	Wide Field 10x/16mm	Fixed 2x	Pillar, with fixed holder	LED incident light with slot for 2 AA batteries (batteries not included)
S-10-P	Binocular, fixed, vertical	Wide Field 10x/20mm	Fixed 2x	Pillar	Without illumination
S-10-L	Binocular, fixed, vertical	Wide Field 10x/20mm	Fixed 2x	Pillar	Incident light - tungsten bulb
S-10-2L	Binocular, fixed, vertical	Wide Field 10x/20mm	Fixed 2x	Pillar	Incident and transmitted light - tungsten bulbs
S-20-L	Binocular Fixed - 45° inclined, forwards	Wide Field 10x/20mm	Fixed 2x	Pillar	Incident light - tungsten bulb
S-20-2L	Binocular, fixed, 45° inclined, forwards	Wide Field 10x/20mm	Fixed 2x	Pillar	Incident and transmitted light - tungsten bulbs
ST-30B-2L	Binocular, fixed, 45° inclined, backwards	Wide Field 10x/20mm	Selectable 1x-3x	Pillar	Incident and transmitted light - tungsten bulbs
ST-30-2LR	Binocular, fixed, 45° inclined, backwards	Wide Field 10x/20mm	Selectable 2x-4x	Pillar	Incident and transmitted light - tungsten bulbs
ST-30-2LF	Binocular, fixed, 45° inclined, forwards	Wide Field 10x/20mm	Selectable 2x-4x	Pillar	Incident and transmitted light - tungsten bulbs
ST-30-2Led	Binocular, fixed, 45° inclined, forwards	Wide Field 10x/20mm	Selectable 2x-4x	Pillar	LED Incident and transmitted light - rechargeable battery
ST-30-2LedR	Binocular, fixed, 45° inclined, backwards	Wide Field 10x/20mm	Selectable 2x-4x	Pillar	LED Incident and transmitted light - rechargeable battery
ST-40B-2L	Binocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	Selectable 1x-3x	Pillar	Incident and transmitted light - tungsten bulbs
ST-40-2L	Binocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	Selectable 2x-4x	Pillar	Incident and transmitted light - tungsten bulbs
ST-45-2L	Binocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	Selectable 2x-4x	Pillar with fixed holder	Incident and transmitted halogen lights
ST-50Led	Binocular, Fixed, 45° inclined, forwards	Wide Field 10x/20mm	Fixed 2x	Overhanging	LED incident light on flexible arm

STEREO Series - Accessories

ACCESSORIES FOR STX AND MS-2

ST-009	Dust cover.
ST-015	Glass stage, 60 mm diameter.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR OTHER MODELS OF STEREO SERIES

ST-001	Eyepieces (pair) WF5x/22mm.
ST-002	Eyepieces (pair) WF10x/20mm.
ST-003	Eyepieces (pair) WF15x/15mm.
ST-004	Eyepieces (pair) WF20x/13mm.
ST-005	Eyepiece micrometer WF10x/20mm, 10mm/100um.
ST-020	1x objective (for S-10 and S-20 series).
ST-021	3x objective (for S-10 and S-20 series).
ST-022	4x objective (for S-10 and S-20 series).
ST-025	1x objective (for ST-50Led).
ST-026	3.5x objective (for ST-50Led).
ST-040	Darkfield condenser (for all, except ST-45-2L).
ST-041	Sample clip.
ST-032	Eyecups (pair).
ST-011	White/black object-plate, diameter 60 mm (for ST-45-2L).
ST-012	White/black object-plate, diameter 95 mm (for all, except ST-45-2L).
ST-014	Glass stage, diameter 95 mm (for all, except ST-45-2L).
ST-015	Glass stage, diameter 60 mm (for ST-45-2L).
ST-006	Tungsten bulb, 12V/10W.
ST-028	Halogen bulb 12V/10W.
DC-001	Plastic dust cover, small (for all, except ST-50Led).
DC-002	Plastic dust cover, medium (for ST-50Led).
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-113.2	Ring adapter, 30.5mm (for monocular and binocular microscopes).
M-069	Solar battery pack (for ST-30-2Led, ST-30-2LedR, ST-50Led).
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

M-069 - Solar battery pack

Included battery: rechargeable – Lithium-Poly. Capacity: 2600 mAh.
Output voltage: 5,5Vdc. - Dimensions: 120x73x10 mm.
Autonomy: over 6 hours at medium intensity (X-LED³).
Charging modes: with solar panel (12h),
with external USB power supply (not included)
or from PC USB port (5h).



15104 - Cleaning kit

It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.



ST-041 - Sample clip



How to connect the cameras to our microscopes.

Please refer to the Adapter reference list on Digital section.

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LAB Series



Stereomicroscopes For Students And Teachers

LAB-10 / LAB-20 / LAB-30

A Range Of Quality Microscopes

DESIGNED FOR STUDENTS AND TEACHERS

- » Extremely reliable microscopes for education
- » Particularly recommended for schools
- » Ideal for biology, zoology and material science

COMPLETE STEREOMICROSCOPES

- » Dual magnification or continuous zoom available
- » 20mm field number
- » High-efficiency LED for incident and transmitted light



Attention To Detail

HANDY, YET EXTREMELY STABLE

- » Compact, practical and intuitive to use
- » Optics ensuring good quality images
- » Sturdy rack-and-pinion focusing stand

EASY TO TAKE CARE OF

- » Durable for extended lifetime
- » Only simple lens cleaning is required time to time
- » Dust cover protects from environmental contaminants



LAB Series

Greenough Optical System

The V-shape optical path of Greenough allows us to design a very compact and a slim unit, highly versatile and appreciated for the 3D viewing. Samples with significant depth can be quickly inspected.

6.4:1 Zoom Ratio

LAB-20 and LAB-30 have 0.7x-4.5x zoom range (6.4:1 zoom ratio), being purposely designed for routine inspections. This zoom ratio enables most samples to be observed at the appropriate magnifications. When combined with proper accessories (1.5x additional lens and 20x eyepieces), **LAB-20** can reach 135x maximum magnification, an excellent result in this class.

LED - Optimized Illumination

Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb. LED illumination is available as transmitted and incident illuminators.

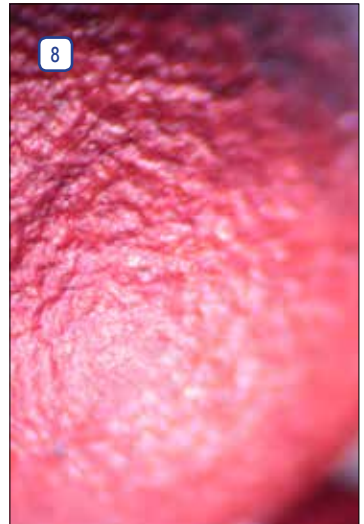
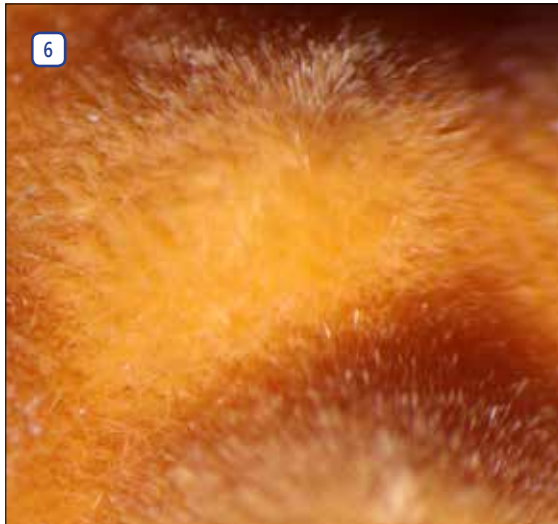
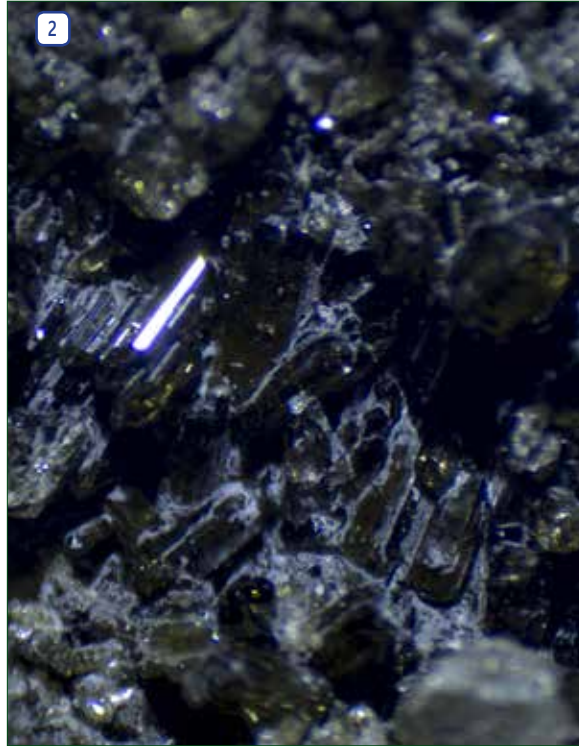


Comfortable And Easy Carrying

Integrated handle is extremely useful when lifting and carrying the microscope from one shelf to another. The microscope itself is also very light to be easy handled even by the youngest students.



Stereomicroscopes For Students And Teachers



Legend

1. LAB Series handle for easy and comfortable transportation.
2. Freislebenite with LAB-20 and 3x zoom.
3. Jute bag section with LAB-10 and 4x zoom.
4. Garment processing with LAB-20 and 4.5x zoom.
5. Nut section with LAB-20 and 4.5x zoom.
6. Plastic satin finish with LAB-10 and 4x zoom.
7. LAB-20, LED incident light, zoom and objective.
8. Red plastic sample with LAB-20 and 4.5x zoom.

LAB Series - Overview

The LAB Series is ideal for educational purposes in primary and secondary school, providing an exclusive and attractive design combined with premium quality components and optics. Obtain clear stereoscopic view and comfortable and ergonomic operation.

**Observation mode:**

Brightfield.

Heads:

Binocular and trinocular 360° rotating and 45° inclined.

Interpupillary distance:

Adjustable between 51 and 75 mm.

Dioptric adjustment:**LAB-10:**

Dioptric compensation adjustable on left eyepiece tubes.

LAB-20 and LAB-30:

Dioptric compensation adjustable on both eyepiece tubes.

Eyepieces:

WF10x/20 mm.

Objectives:**LAB-10:**

With double selectable magnification (2x-4x) that can be selected by rotating the lens unit. Working distance 80mm.

LAB-20 and LAB-30:

Continuous zoom 0.7x ...4.5x. (6.43:1 zoom factor).

Working distance: 85 mm.

Stand:

Fixed arm type with focusing mechanism.

Focusing:

Rack and pinion controlled by a pair of knobs placed on both sides of the stand.

Illumination:

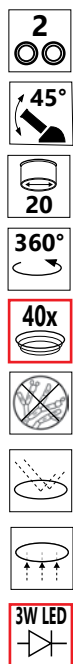
Double illuminator for incident and transmitted light fitted with two high-efficiency LED light sources with light intensity adjustment.

The angle of the incident illuminator is adjustable.

Color temperature: 6.300K.

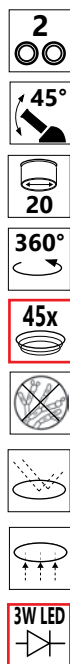
LAB Series - Range

LAB-10



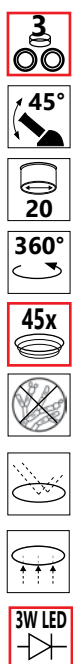
Dual selectable magnification (2x and 4x) with LED incident and transmitted illumination, combining bright and uniform illumination with low consumption.

LAB-20



Continuous zoom magnification (0.7x4.5x) with LED incident and transmitted illumination, combining bright and uniform illumination with low consumption.

LAB-30



Continuous zoom magnification (0.7x4.5x) with LED incident and transmitted illumination, combining bright and uniform illumination with low consumption.



LAB Series - Optical performance

Optical performance LAB-10

Eyeiece	5x (ST-001.1)		10x (ST-401)		15x (ST-402)		20x (ST-403)	
Field number (mm)	22		20		15		10	
Additional lens	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
None	10x – 20x	11 – 5.5	20x – 40x	10 – 5	30x – 60x	7.5 – 3.75	40x – 80x	5 – 2.5

Optical performance LAB-20 - LAB-30

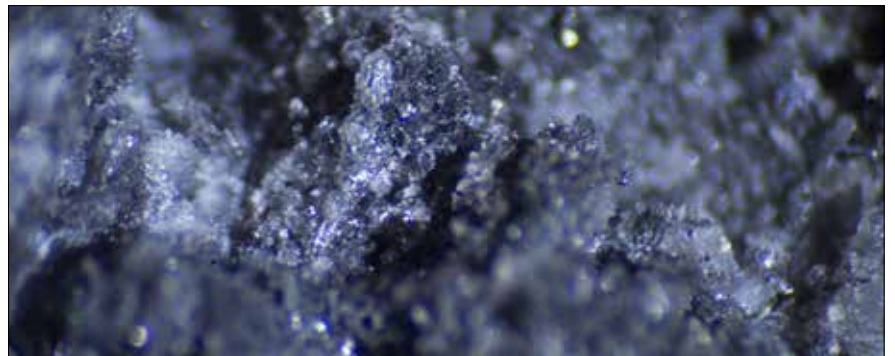
Eyeiece	5x (ST-001.1)		10x (ST-401)		15x (ST-402)		20x (ST-403)	
Field number (mm)	22		20		15		10	
Additional lens	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
0.5x	1.75x – 11.25x	62.86-9.78	3.5x – 22.5x	57.14 – 8.89	5.25x – 33.75x	42.86-6.67	7x – 45x	28.57-4.44
None	3.5x – 22.5x	31.43-4.89	7x – 45x	28.57 – 4.44	10.5x – 67.5x	21.43-3.33	14x – 90x	14.29-2.22
1.5x	5.25x – 33.75x	20.95-3.26	10.5x – 67.5x	19.05 – 2.96	15.75x – 101.25x	14.29-2.22	21x – 135x	9.52-1.48



LAB Series - Optical path

Greenough Optical System

Brain and eyes work together to produce a "stereoscopic vision", which provides spatial, 3D images of the objects surrounding us. When the image is transmitted to the brain, the resulting image is fused together. Stereo microscopes take advantage of this depth perception ability by transmitting twin images that are inclined (usually between 10°-12°) to yield a true stereoscopic effect.

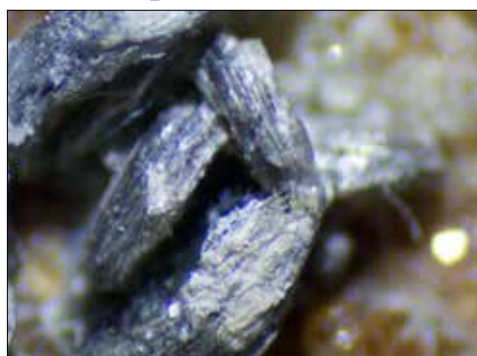


Vesuviana - LAB-20 - 2x zoom

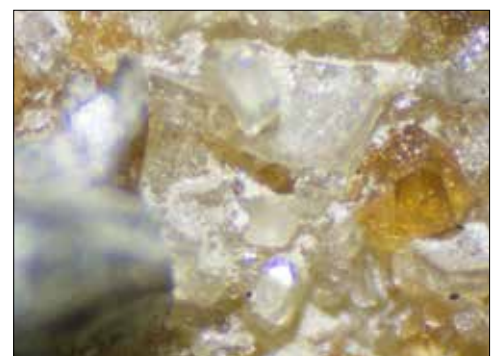
LAB Series - Zoom comparison



Azurite - LAB-20 - 1x zoom



Azurite - LAB-20 - 2x zoom

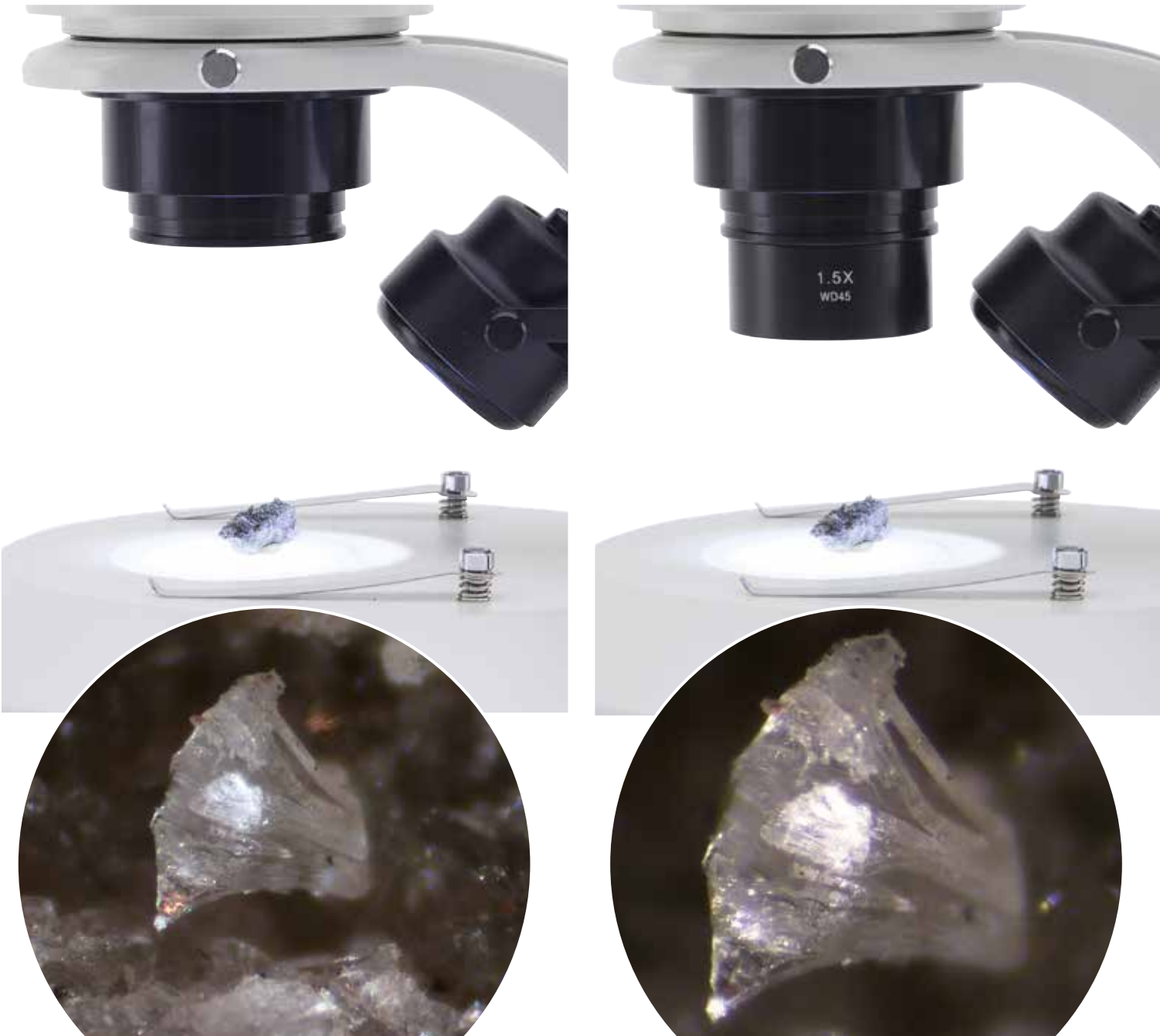


Azurite - LAB-20 - 4.5x zoom

LAB Series - Comparison chart

Model	Head	Eyepiece	Objectives	Working Distance	Stand	Illuminator
LAB-10	Binocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	2x - 4x selectable by rotating	80 mm	Pillar stand with fixed holder	Double incident and transmitted light. High-efficiency LED light sources with separate brightness controls
LAB-20	Binocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	0.7x....4.5x zoom	85 mm	Pillar stand with fixed holder	Double incident and transmitted light. High-efficiency LED light sources with separate brightness controls
LAB-30	Trinocular, 360° rotating, 45° inclined	Wide Field 10x/20mm	0.7x....4.5x zoom	85 mm	Pillar stand with fixed holder	Double incident and transmitted light. High-efficiency LED light sources with separate brightness controls

LAB Series - Get the most out of our accessories



Actinolite - LAB-20 - 4.5x zoom

Actinolite - LAB-20 - 4.5x zoom
with additional 1.5x lens (ST-086)

LAB Series - Accessories

ACCESSORIES FOR LAB SERIES

ST-001.1	Eyepieces (pair) WF5x/22mm.
ST-401	Eyepieces (pair) WF10x/20 mm.
ST-402	Eyepieces (pair) WF15x/15 mm.
ST-403	Eyepieces (pair) WF20x/10 mm.
ST-405	Eyepiece micrometer WF10x/20mm, 10mm/100um.
ST-085	Additional lens 0.5x (w.d. 165mm) (Only for LAB-20 and LAB-30.)
ST-086	Additional lens 1.5x (w.d. 47mm) (Only for LAB-20 and LAB-30.)
ST-415	Eyecups (pair).
DC-002	Plastic dust cover, medium.
ST-092	Protective glass for stereohead.
ST-417	White/black stage-plate, 60mm diameter for LAB Series.
M-114	C-Mount adapter for 1/2" sensor.
M-115	C-Mount adapter for 1/3" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-113.1	Ring adapter, 30mm (for monocular and binocular microscopes).
ST-418	Focusable C-Mount adapter for 1/3" sensor.
ST-419	Focusable C-Mount adapter for 1/2" sensor.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.
VP-LAB	IQ/OQ/PQ Validation Protocols.

15104 - Cleaning kit

It cleans glass quickly and effectively, without leaving residue or odor. Ideal for precision lens or prism cleaning.



How to connect the cameras to our microscopes.

Please refer to the Adapter reference list on Digital section.

Headquarters and Manufacturing Facilities

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