

OPTIKA[®]
M I C R O S C O P E S
I T A L Y



EDUCATIONAL Microscopes

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



EDUCATIONAL Microscopes






















Biological Microscopes

ECOVISION SERIES - Entry Level Biological Microscopes For Students	page 5
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B-190 SERIES - Advanced Biological Microscopes For Students And Teachers	page 37

Stereomicroscopes

SFX/STEREO SERIES - Entry Level Stereomicroscopes For Students	page 53
LAB SERIES - Stereomicroscopes For Students And Teachers	page 65

Icons

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

OPTIKA[®]
M I C R O S C O P E S
I T A L Y

ECOVISION Series



Entry Level Biological Microscopes For Students

B-20R / B-20CR / B-50 / B-50B / M-100FX / M-100FLed

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
- » 18mm field number represents a good observation area
- » Achromatic lenses for common 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
- » No maintenance required
- » Dust cover (included) 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

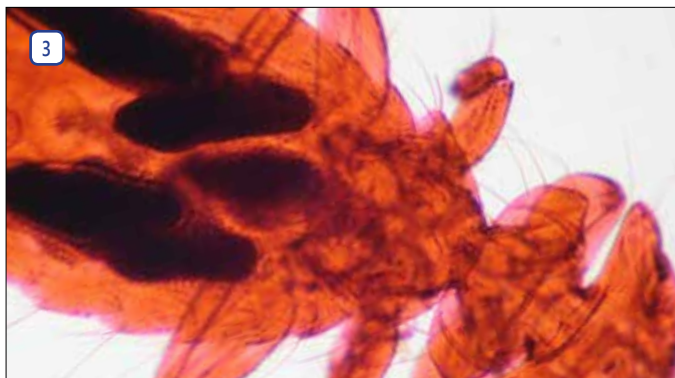
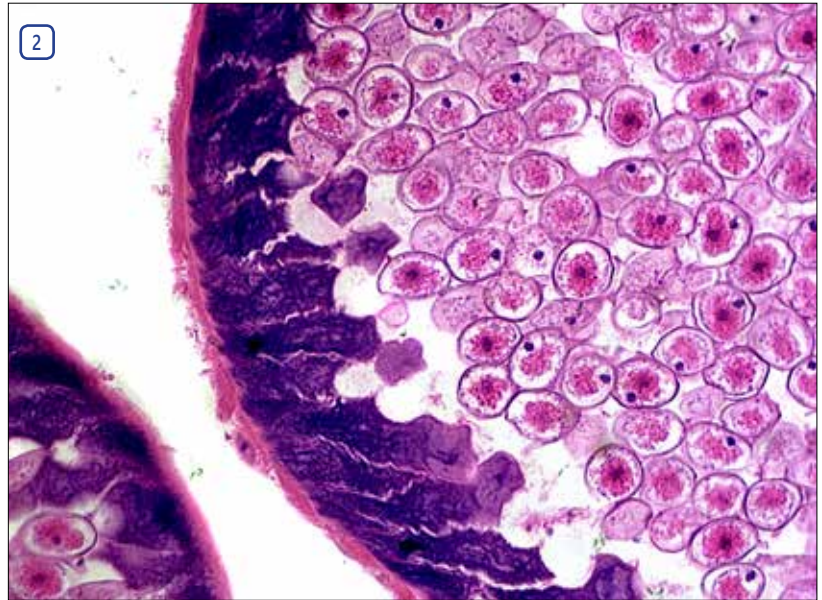
Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb.

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

B-50 and B-50B models have 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. Mechanical stage of B-20CR.
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

OPTIKA ECOVISION Series includes monocular and binocular biological microscopes, designed especially for students attending primary school. Slim and easy to carry solutions, it is equipped with all the basic controls of an optical microscope and all you need to start learning to use a scientific instrument: 18 mm field of view, up to 400x maximum magnification (1000x as optional), several options concerning stages, focusing, condenser and illumination system.



Observation mode:

Brightfield.

Head:

Monocular and binocular, 30° and 45° inclined, 360° rotating.

Eyepieces:

WF 10x/18.

Nosepiece:

Triple and quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

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

Specimen stage:

B-20R:

Round, 360° rotating, 90 mm diameter, with sample clips.

B-20CR:

Double layer, 105x95 mm, moving range 50x15 mm.

B-50 / B-50B / M-100FX / M-100FLed models:

Fixed, 120x110 mm, with sample clips.

Focusing:

B-20R / M-100FX / M-100FLed:

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

B-20CR / B-50 / B-50B:

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

Condenser:

B-20R:

Diffusing filter with rotating diaphragm wheel.

B-20CR / B-50B / M-100FX / M-100FLed models:

N.A. 0.65, fixed, iris diaphragm.

B-50:

N.A. 0.65, fixed.

Illumination:

B-20R:

0.3 W LED, manual brightness control, rechargeable batteries.

B-20CR:

0.5 W LED, manual brightness control, rechargeable batteries.

B-50 / B-50B:

1 W LED built-in in the condenser, manual brightness control.

M-100FX:

1 W LED.

M-100FLed:

0.5 W LED, manual brightness control, rechargeable batteries.

ECOVISION Series - Range

B-20R



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

B-20CR



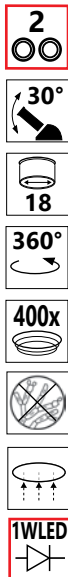
Complete of **mechanical stage, condenser, coaxial focus knobs** and **LED illumination with rechargeable batteries**.

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. Optional 60x and 100x objectives available.

B-50B



Binocular version of B-50, equipped with 3 objectives and **4-position nosepiece** for an additional objective. The **condenser offers a built-in, settable LED illumination system for ultra-bright light and great contrast**. Optional 60x and 100x objectives available.

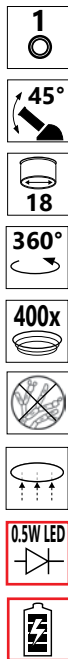
ECOVISION Series - Range

M-100FX



Equipped with **LED illumination**, 45° inclined and 360° rotating head. Optional 60x and 100x objectives available.

M-100FLed



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

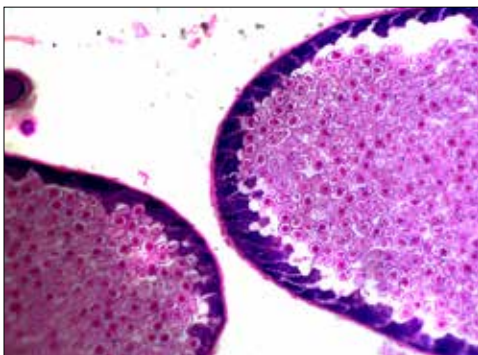


ECOVISION Series - Comparison chart

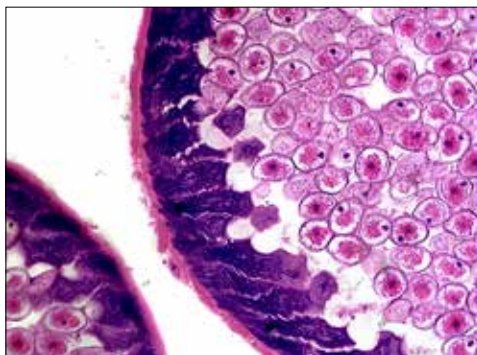
Model	Head	Eyepieces	Nosepiece	Objectives	Stage	Focusing	Condenser	Illuminator
B-20R	Monocular, 45° inclined, 360° rotating	WF 10x/18	Triple, Reversed	Achromatic 4x, 10x, 40x	Round, 360° rotating, 90 mm diameter, with sample clips	Separate coarse and fine	Diffusing filter with rotating diaphragm wheel	0.3 W LED, manual brightness control, rechargeable batteries
B-20CR	Monocular, 45° inclined, 360° rotating	WF 10x/18	Triple, Reversed	Achromatic 4x, 10x, 40x	Double layer, 105x95 mm, moving range 50x15 mm	Coaxial coarse and fine	N.A. 0.65, fixed, iris diaphragm	0.5 W LED, manual brightness control, rechargeable batteries
B-50	Monocular, 45° inclined, 360° rotating	WF 10x/18	Triple	Achromatic 4x, 10x, 40x	Fixed, 120x110 mm, with sample clips	Coaxial coarse and fine	N.A. 0.65, fixed	1 W LED built-in in the condenser, manual brightness control
B-50B	Binocular, 30° inclined, 360° rotating	WF 10x/18	Quadruple	Achromatic 4x, 10x, 40x	Fixed, 120x110 mm, with sample clips	Coaxial coarse and fine	N.A. 0.65, fixed, iris diaphragm	1 W LED built-in in the condenser, manual brightness control
M-100FX	Monocular, 45° inclined, 360° rotating	WF 10x/18	Triple	Achromatic 4x, 10x, 40x	Fixed, 120x110 mm, with sample clips	Separate coarse and fine	N.A. 0.65, fixed, iris diaphragm	1 W LED
M-100FLed	Monocular, 45° inclined, 360° rotating	WF 10x/18	Triple	Achromatic 4x, 10x, 40x	Fixed, 120x110 mm, with sample clips	Separate coarse and fine	N.A. 0.65, fixed, iris diaphragm	0.5 W LED, manual brightness control, rechargeable batteries



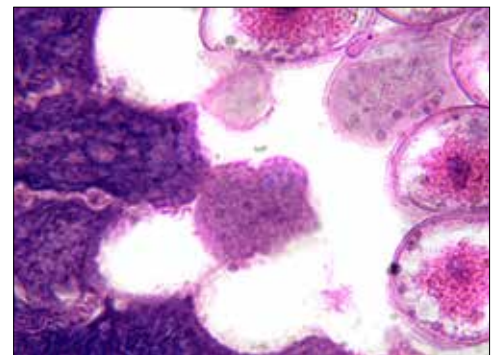
ECOVISION Series - Zoom comparison



Ascaris female - B-50 - 4x objective



Ascaris female - B-50 - 10x objective



Ascaris female - B-50 - 40x objective

ECOVISION Series - Accessories

ACCESSORIES FOR B-20R / B-20CR

M-002	Eyepiece WF 10x/18 mm.
M-008	Eyepiece with pointer WF 10x/18 mm.
M-727	Achromatic objective 4x/0.10.
M-728	Achromatic objective 10x/0.25.
M-729	Achromatic objective 40x/0.65.
DC-001	Plastic dust cover, small.
M-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR B-50 / B-50B

M-001	Eyepiece H5x.
M-002.1	Eyepiece WF 10x/18 mm.
M-003	Eyepiece WF 16x/12 mm.
M-004	Eyepiece with micrometer WF 10x/18 mm, 10mm/100um.
M-008	Eyepiece with pointer WF 10x/18 mm.
M-131	Achromatic objective 4x/0.10.
M-132	Achromatic objective 10x/0.25.
M-133	Achromatic objective 20x/0.40.
M-134	Achromatic objective 40x/0.65.
M-135	Achromatic objective 60x/0.80.
M-136	Achromatic objective 100x/1.25 (oil).
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-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
15104	Cleaning kit.

ACCESSORIES FOR M-100FX / M-100FLed

M-001	Eyepiece H5x.
M-002	Eyepiece WF 10x/18 mm.
M-003	Eyepiece WF 16x/12 mm.
M-004	Eyepiece with micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF 10x/18 mm.
M-131	Achromatic objective 4x/0.10.
M-132	Achromatic objective 10x/0.25.
M-133	Achromatic objective 20x/0.40.
M-134	Achromatic objective 40x/0.65.
M-135	Achromatic objective 60x/0.80.
M-136	Achromatic objective 100x/1.25 (oil).
M-040	Attachable mechanical stage.
M-099	Polarizing set (filters and rotating table).
M-971	Plane-concave mirror, with base.
DC-001	Plastic dust cover, small.
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.

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.



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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OPTIKA®
M I C R O S C O P E S
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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
- » Cordless, 8-15h operating time (on R models)
- » Ideal for biology and material science

BIOLOGICAL EDUCATIONAL MICROSCOPES

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



X-LED¹ – 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 1W
- » LED long lifetime (50.000 hours = 20 years at 8 hours/day usage)



Halogen

X-LED¹

OPTIKA
MICROSCOPES
I T A L Y

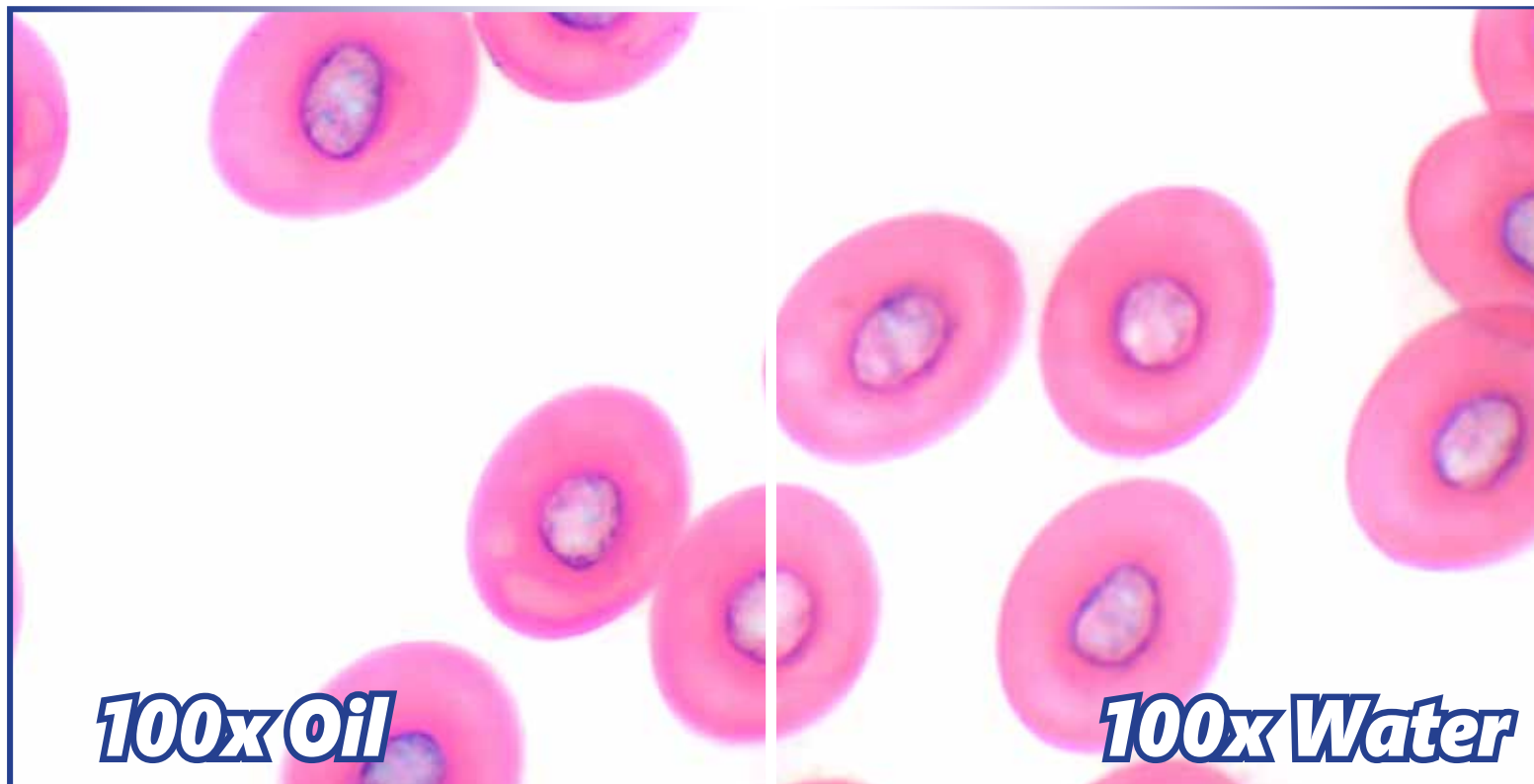
100x With Water – A New Frontier In Education

SAME OBJECTIVE FOR OIL AND WATER USE

- » Oil represents the best media for high numerical apertures
- » Water combines relevant results with convenience
- » Water is recommended especially for educational purposes

UNPARALLELED TIME & MONEY SAVINGS

- » Save time by forgetting about tedious cleaning
- » No time-wasting procedures
- » No additional expenses due to inappropriate cleaning & maintenance



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.



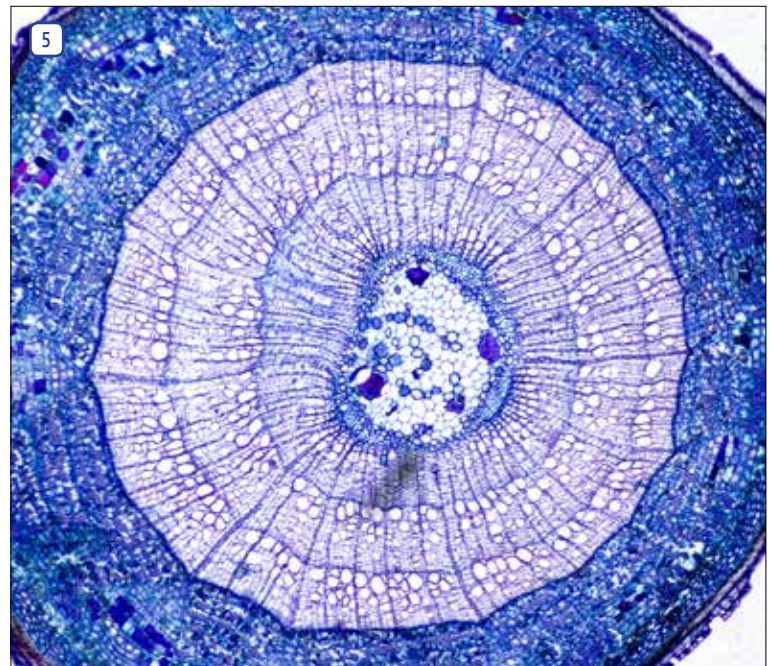
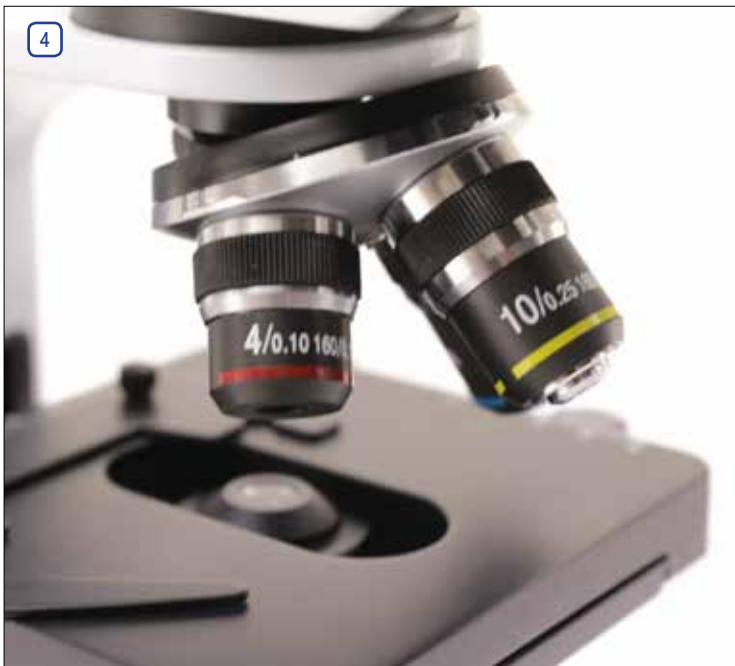
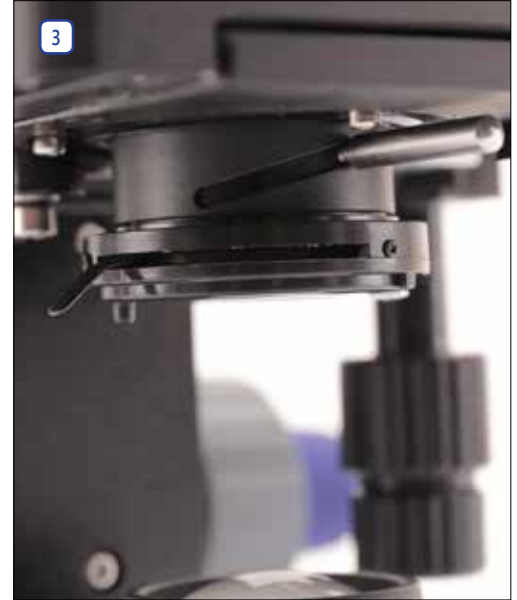
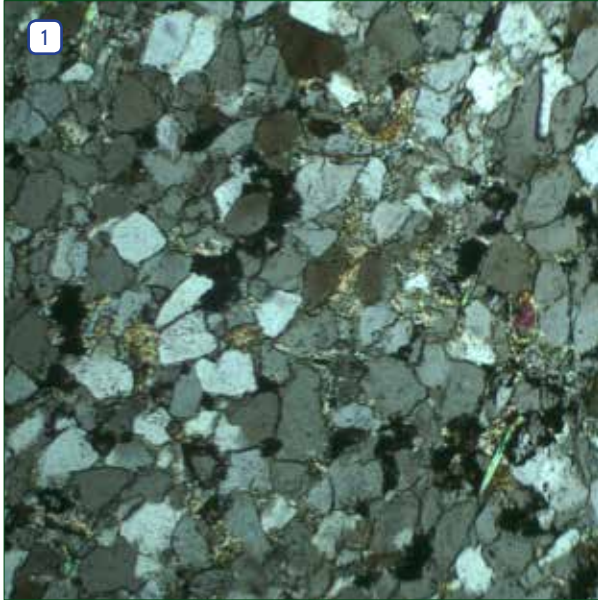
ALC - Automatic Light Control, Only Available At OPTIKA

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.

Dioptic adjustment:

On the left eyepiece.

Eyepieces:

WF10x/18 mm.

Nosepiece:

Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

HC - High Contrast (different magnifications available) with an anti-fungus treatment.

Specimen stage:

B-151 models: Fixed stage, 130x120 mm.

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

Mechanical stage, 126x116mm, 70x30 mm X-Y movement range. Vernier scale on the two axes, accuracy: 0.1mm.

B-150POL models: Rotatable round stage, 120 mm 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:

X-LED¹ with white 1 W LED and light intensity control.

Color temperature: 6,300 K.



HC

OPTIKA HC objectives ensure a versatile and reasonably priced entry-level lenses for brightfield and simple polarization applications.

They are specifically designed to achieve optimal contrast and thus maximize yield on an instrument intended for education on F.N. 18.

Learn on how the 100x/1.25 (oil) operates by using water instead of oil at page 18.

B-150 Series - Range

B-151



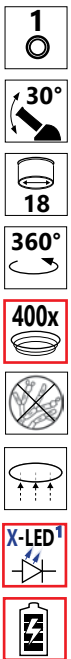
Entry level model with fixed stage and **efficient X-LED¹ illumination.**

B-151ALC



Entry level model with the **exclusive ALC technology for Automatic Light Control**, fixed stage and efficient X-LED¹ illumination.

B-151R



Entry level model with rechargeable battery for **very long outdoor operation up to 15 hours.** Equipped with fixed stage and efficient X-LED¹ 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



B-155ALC



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

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.

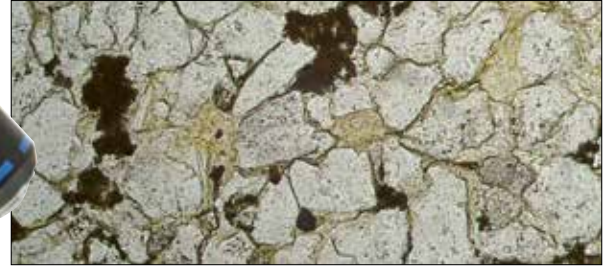


Four achromatic objectives included for a great viewing experience:

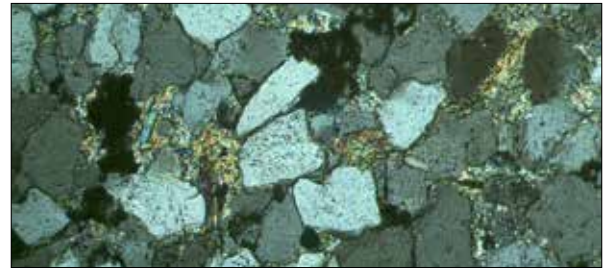
4x , N.A. 0.10, W.D. 18 mm	10x , N.A. 0.25, W.D. 7 mm
40x , N.A. 0.65, W.D. 0.53 mm	100x (oil), N.A. 1.25, W.D. 0.13 mm

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

B-150POL-B

- 1**
- 30°**
- 18**
- 360°**
- 400x**
-
-
-



- 2**
- 30°**
- 18**
- 360°**
- 400x**
-
-
-



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



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



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



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

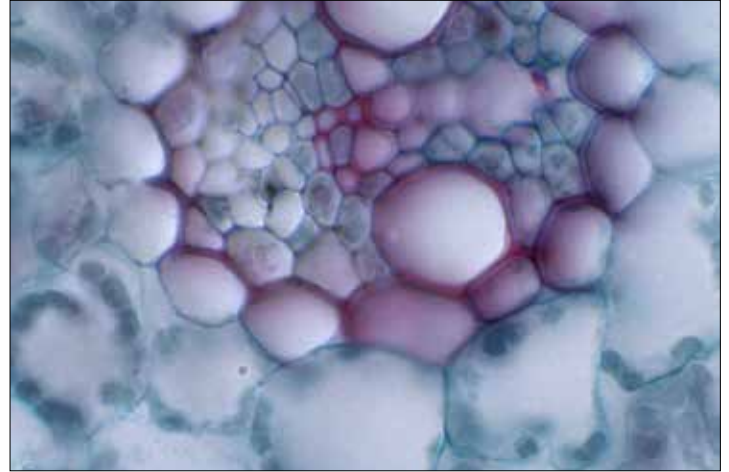
B-150POL-BR



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

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B-150DMR

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

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

B-150 Series - Range

B-150DB



B-150DBR



Equipped with **built-in camera with 3 MP resolution**, double-layer mechanical stage and efficient X-LED¹ illumination.

Rechargeable battery ensures very long outdoor operation of up to 15 hours, with **built-in camera with 3 MP resolution**, double-layer mechanical stage and efficient X-LED¹ illumination.



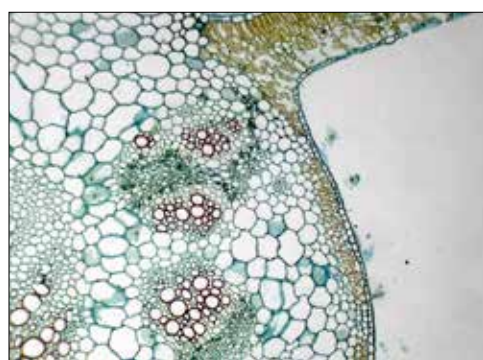
B-150 Series - B-150D Camera specifications

	B-150DM	B-150DB
Resolution	1280x1024 pixels (1.3 MP)	2048x1536 pixels (3.14 MP)
Sensor	1/3.2"CMOS	1/2.5"CMOS
Pixel size	2.8x2.8 μ m	2.2x2.2 μ m
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	\geq 42 dB	\geq 40 dB
Dynamic Range	\geq 71 dB	\geq 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	

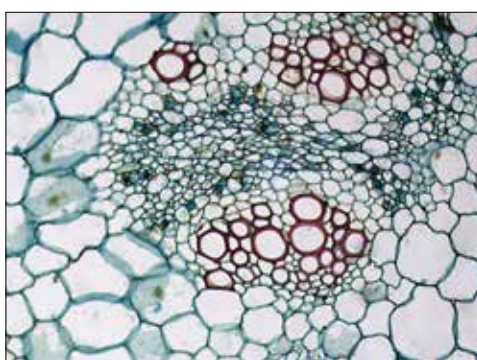
B-150 Series - Optical performance

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

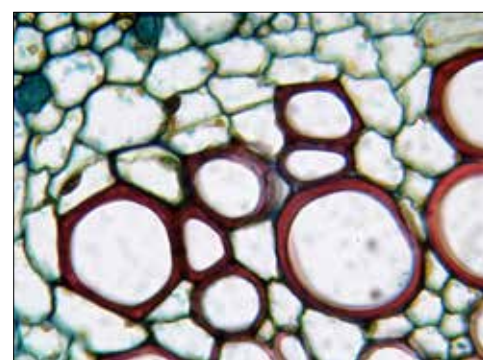
B-150 Series - Zoom comparison



Monocot and dicot - B-157 - 4x objective



Monocot and dicot - B-157 - 10x objective



Monocot and dicot - B-157 - 40x objective

B-150 Series - Accessories

ACCESSORIES FOR B-150 SERIES

M-002.1	Eyepiece WF10x/18mm.
M-003	Eyepiece WF16x/12mm.
M-004	Eyepiece micrometer WF10x/18mm, 10mm/100um.
M-008	Eyepiece with pointer WF10x/18mm.
M-137	HC (high contrast) objective 4x/0.10.
M-138	HC (high contrast) objective 10x/0.25.
M-139	HC (high contrast) objective 20x/0.40.
M-141	HC (high contrast) objective 40x/0.65.
M-142	HC (high contrast) objective 60x/0.80.
M-143	HC (high contrast) 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-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.

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OPTIKA[®]
M I C R O S C O P E S
I T A L Y

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 3 W
- » LED long lifetime (50.000 hours = 20 years at 8 hours/day usage)



Halogen

X-LED²



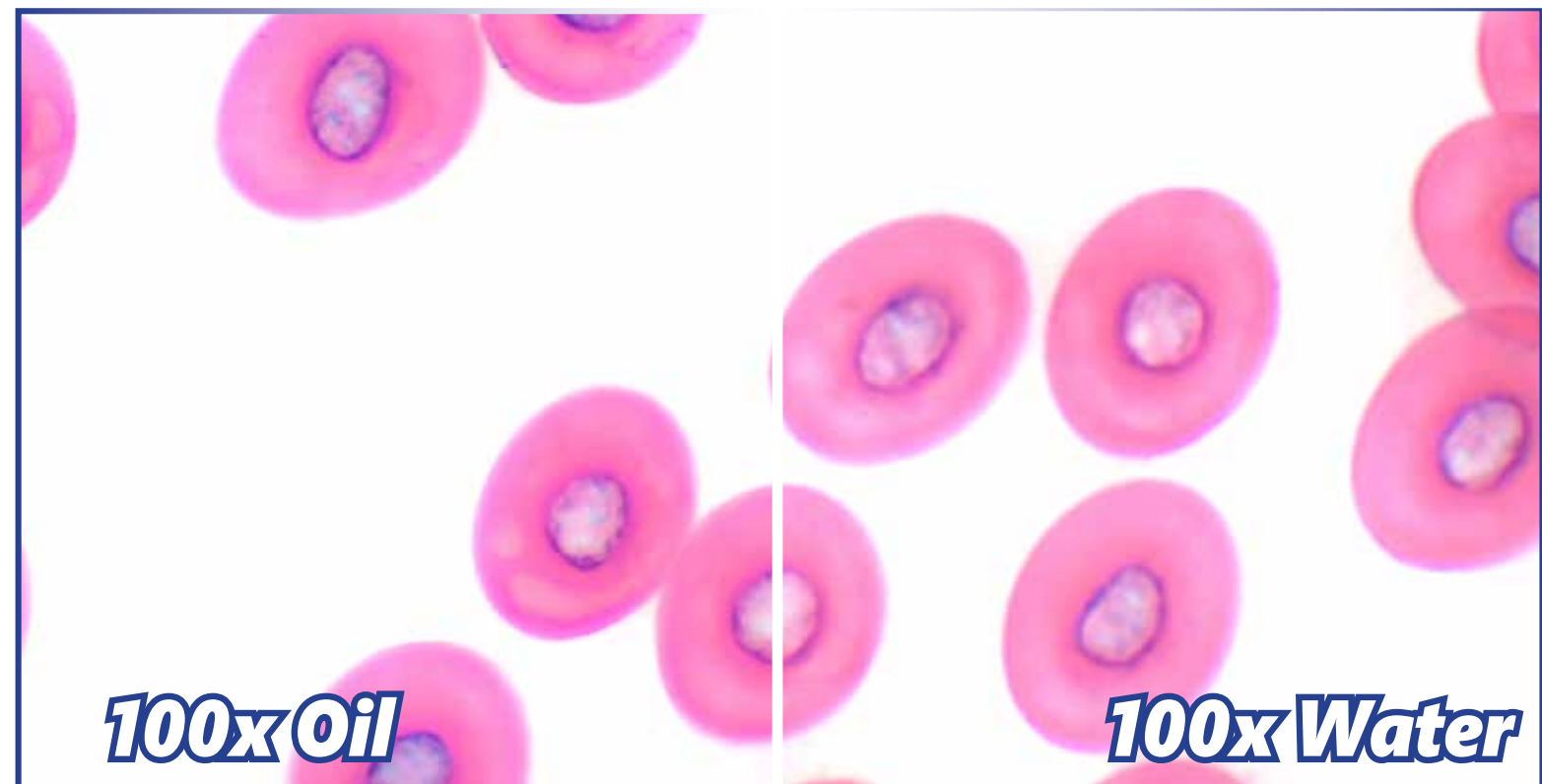
100x With Water – A New Frontier In Education

SAME OBJECTIVE FOR OIL AND WATER USE

- » Oil represents the best media for high numerical apertures
- » Water combines relevant results with convenience
- » Water is recommended especially for educational purposes

UNPARALLELED TIME & MONEY SAVINGS

- » Save time by forgetting about tedious cleaning
- » No time-wasting procedures
- » No additional expenses due to inappropriate cleaning & maintenance



100x Oil

100x Water

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

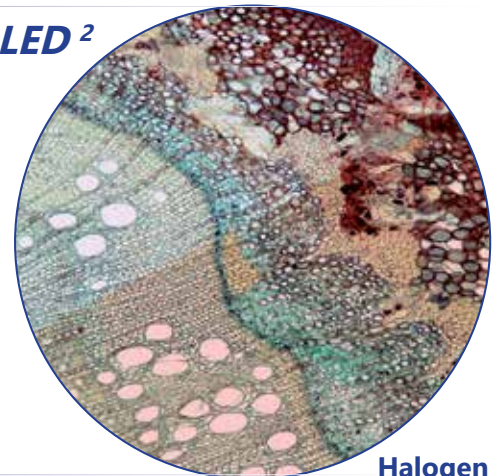
Get all the controls and features common to higher level microscopes: translating stage, binocular or trinocular head, coaxial focus knob, adjustable condenser, and 1000x maximum magnification (standard). An extremely simple but well equipped solution, in a modern and ergonomic design.

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 (3 W only) proves the high efficiency of this system: incredibly high light intensity combined with low consumption.

X-LED²



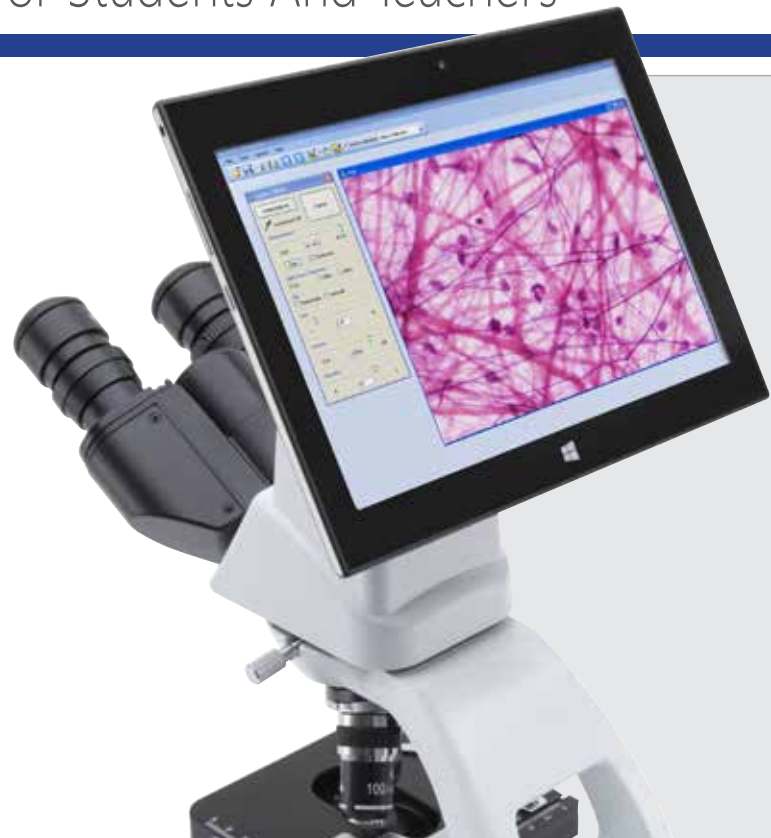
Halogen



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

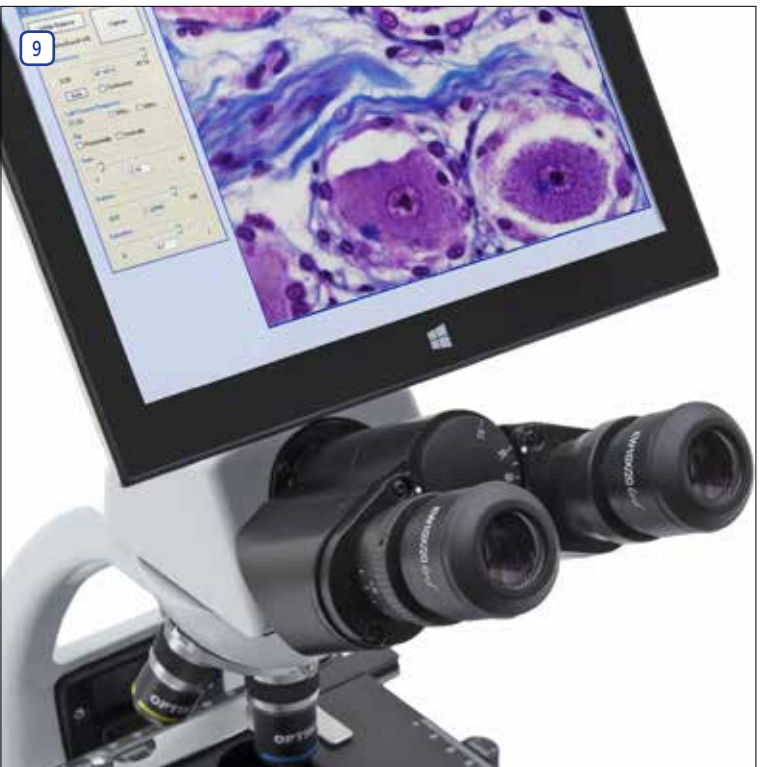
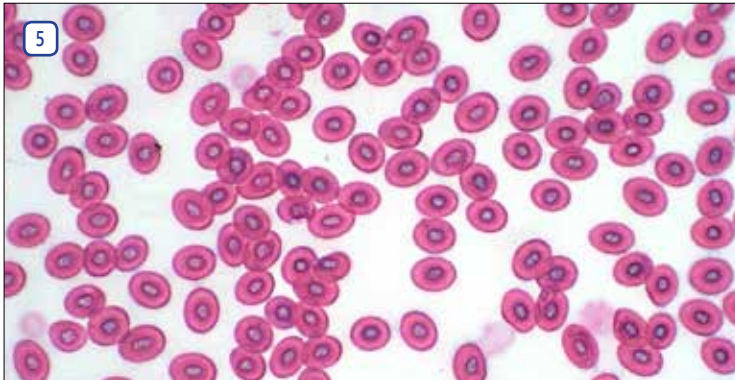
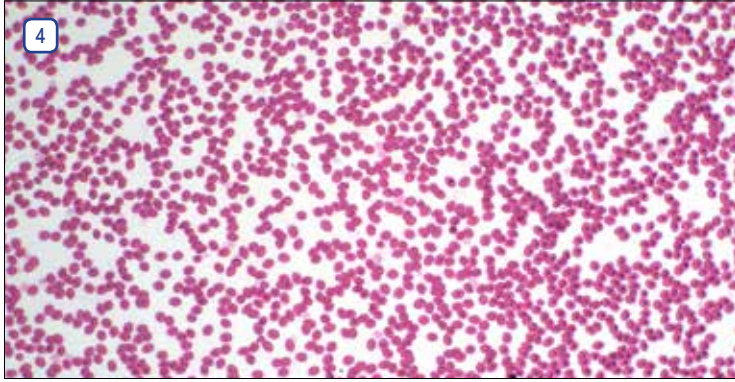
Applications

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.





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:

WF 10x/18 mm.

Nosepiece:

Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

HC - High Contrast (different magnifications available) with an anti-fungus treatment.

Specimen stage:

Double layer mechanical sliding stage, 125x115 mm, 70x30 mm 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 3 W LED and light intensity control.

Color temperature: 6,300 K.



HC

OPTIKA HC objectives ensure a versatile and reasonably priced entry-level lenses for brightfield, darkfield and simple polarization applications. They are specifically designed to achieve optimal contrast and thus maximize yield on an instrument intended for education on F.N. 18. Learn on how the 100x/1.25 (oil) operates by using water instead of oil at page 39.

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

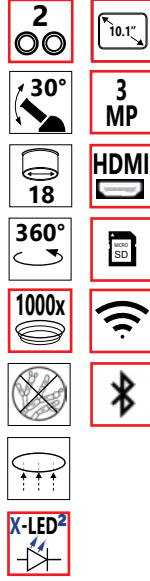
B-193



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



PATENTED

3 MP 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 3 MP camera with a 10.1" Windows tablet. View, capture, analyze and share your images with simplicity and reliability.

Intuitive, Yet Powerful Software

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

PATENTED



Unique Features

- > Simultaneous camera & power connection
- > Equipped with the latest **Windows OS & Intel** processor
- > Easily detachable, can be used as a laptop (keyboard included)

360° Rotating & Tilting



Detachable



BREAK NEW GROUND WITH TABLET PC

- » Get accurate, dependable results in one click
- » Holding solution for open discussion, 360° rotating and tilting
- » Large touch screen of 10.1" with fast, responsive and smooth control

B-190TB - Digital microscope with camera and tablet

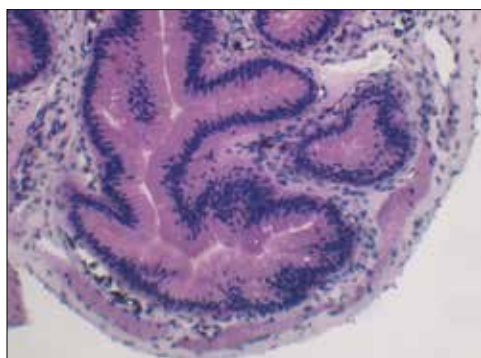


TABLET TECHNICAL SPECIFICATIONS	
Model	Tablet 10.1"
Operating System	Windows 10 32-bit
Language	Multilanguages already installed
Image capturing software	OPTIKA Vision lite
CPU	Intel® Atom™ Z3735F, Quad core
CPU speed	1,83 GHz
Graphics Card	Intel® HD Graphics 3D Accelerator
Memory	Ram 2,048 GB DDR3L
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 MP
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

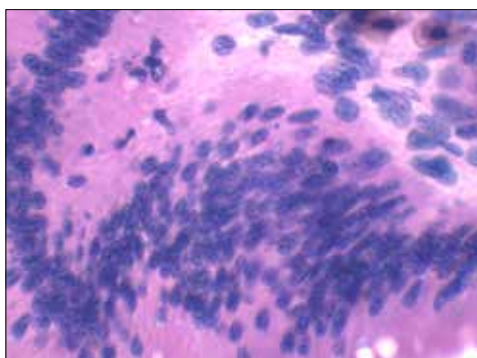
B-190 Series - Optical performance

Eyepiece		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

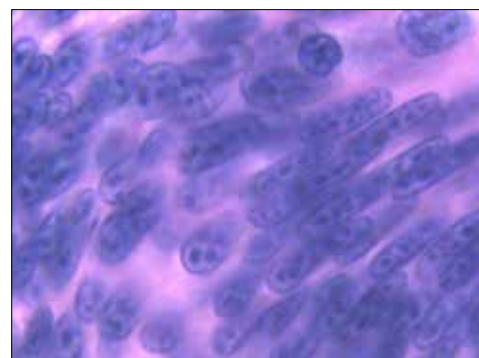
B-190 Series - Zoom comparison



Frog small intestine - B-193 - 10x HC objective



Frog small intestine - B-193 - 40x HC objective



Frog small intestine - B-193 - 100x Oil HC 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	HC 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	3 W X-LED ² system with adjustable intensity
B-191s	Monocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	HC 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	3 W X-LED ² system with adjustable intensity
B-192	Binocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	HC 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	3 W X-LED ² system with adjustable intensity
B-192s	Binocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	HC 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	3 W X-LED ² system with adjustable intensity
B-193	Trinocular, 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	HC 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	3 W X-LED ² system with adjustable intensity
B-190TB	Binocular, digital 360° rotating, 30° inclined.	Wide Field 10x/18mm	Quadruple, reversed	HC 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	3 W X-LED ² system with adjustable intensity

B-190 Series - Accessories

ACCESSORIES FOR B-190 SERIES

M-001	Eyepiece H5x.
M-002.1	Eyepiece WF 10x/18 mm.
M-003	Eyepiece WF 16x/12 mm.
M-004	Eyepiece with micrometer WF 10x/18 mm, 10mm/100um.
M-008	Eyepiece with pointer WF 10x/18 mm.
M-137	HC (high contrast) objective 4x/0.10.
M-138	HC (high contrast) objective 10x/0.25.
M-139	HC (high contrast) objective 20x/0.40.
M-141	HC (high contrast) objective 40x/0.65.
M-142	HC (high contrast) objective 60x/0.80.
M-143	HC (high contrast) 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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M I C R O S C O P E S
I T A L Y

SFX/STEREO Series



Entry Level Stereomicroscopes For Students

MS-2 / STX / SFX-31 / SFX-32 / SFX-33 / SFX-34 / SFX-51 / SFX-52 / SFX-91 / SFX-91D / ST-30FX / ST-50Led

Designed For Simplicity & The Youngest Users

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
- » Generally, 20 mm field number
- » Equipped with high performance 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
- » No maintenance required
- » Dust cover (included) protects from environmental contaminants



Suitable for Field Use

CORDLESS, EASILY TRANSPORTABLE

- » Stable, yet compact and light weight
- » Long-lasting, up to 8 hours from a single charge
- » Fast recharging time

NO NEED FOR POWER CONNECTION

- » Powered by rechargeable batteries (SFX models)
- » Can be transported for being used on site
- » Always ready to work



A New Frontier In Illumination Adjustment

HIGH COMFORT TOUCH CONTROL

- » Light intensity settable via a simple click
- » 5 pre-set intensity levels
- » On transmitted and incident light

FULFILL ALL THE LEARNING CHALLENGES

- » Turnable objective with up to 3 magnifications
- » Precision stand for accurate focusing
- » 3 MP integrated digital camera (on SFX-91D)



SFX/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 Batteries - 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. **All the SFX Series** has internal rechargeable batteries for up to 8 hours (at medium intensity) of outdoor use.

360° Rotating heads

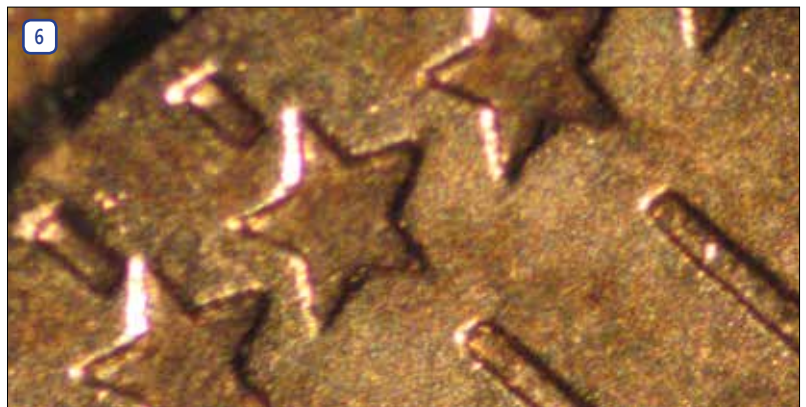
SFX-51 and **SFX-52** have a 360° rotating head, for the most comfortable teaching experience. The head, through rotation, can be shared among different users or adjusted to the user position.

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. Transport handle, SFX-91.
2. Fly eyes, with SFX-91D and 4x objective.
3. Mineral rock, with ST-30FX and 4x objective.
4. Mineral rock, with SFX-51 and 4x objective.
5. Transmitted and incident light setting, in recharging mode, SFX-52.
6. Coin, with SFX-91 and 4x objective.

SFX/STEREO Series - Overview

OPTIKA SFX/STEREO Series includes a wide selection of stereomicroscopes designed to satisfy every need in both teaching and amateur fields. Slim and easy to carry solutions, it is equipped with all you need to start learning to use a scientific instrument: 20 mm field of view, up to 40x maximum magnification, several options concerning illumination (including rechargeable batteries), objectives, and stands.



Observation mode:

Brightfield.

Heads:

Binocular heads (except for monocular MS-2 model).
45° inclined (except for STX: vertical head).

SFX-51, SFX-52 and MS-2:

360° rotating heads.

Interpupillary distance:

Adjustable (for binocular heads).

Dioptic adjustment:

ST-30FX and ST-50Led: On the left eyepiece.

All SFX models: on both eyepieces.

MS-2 and STX: without dioptic adjustment.

Eyepieces:

MS-2 and STX: WF 10x/16 mm.

All other models: WF 10x/20 mm.

Objective:

Achromatic different magnifications available with an anti-fungus treatment.

Stand:

SFX-31, SFX-32, MS-2, ST-30FX and STX:

Pillar stand with focus.

SFX-33, SFX-34, SFX-51 and SFX-52:

Fixed stand with focus and handle.

SFX-91 and SFX-91D:

Precision fixed stand with focus and handle.

ST-50Led:

Overhanging stand with focus.

Illumination:

SFX-31 and SFX-32: Incident: 1W LED, transmitted: 1W LED, dial brightness control, rechargeable batteries.

SFX-33, SFX-34, SFX-51, SFX-52, SFX-91 and SFX-91D:

Incident: 1W LED, transmitted: 1W LED, touch brightness control, rechargeable batteries.

MS-2:

Without illumination.

STX:

Incident: 0.1W LED, powered by 2 AA batteries (not included).

ST-30FX:

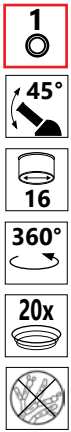
Incident: 1W LED, transmitted: 1W LED.

ST-50Led:

Incident: 1W LED on flexible arm.

SFX/STEREO Series - Range

MS-2



Entry-level monocular stereomicroscope with fixed objective (2x) that can be combined to external illuminators, in case some light is required.

STX



Binocular stereomicroscope equipped with fixed objective (2x) and **LED incident illumination**, combining **bright and uniform illumination** with low consumption. Powered by AA batteries (not included).

SFX-31



Binocular stereomicroscope equipped with **turnable objective** (2x-4x), pillar stand, and **incredibly bright and uniform illumination** (transmitted and incident) with **rechargeable batteries**.

SFX-32



Binocular stereomicroscope equipped with **turnable objective** (1x-3x), pillar stand, and **incredibly bright and uniform illumination** (transmitted and incident) with **rechargeable batteries**.

SFX/STEREO Series - Range

SFX-33



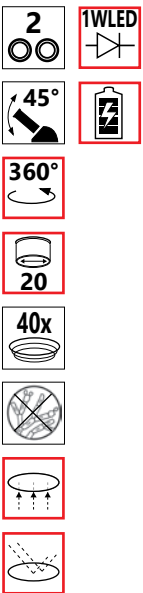
Binocular stereomicroscope equipped with **turnable objective** (2x-4x), fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

SFX-34



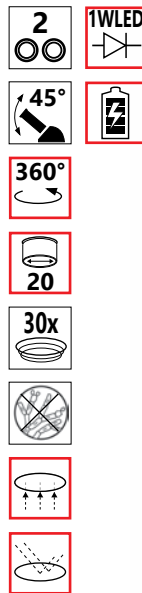
Binocular stereomicroscope equipped with **turnable objective** (1x-3x), fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

SFX-51



Binocular stereomicroscope equipped with **turnable objective** (2x-4x), **360° rotating head**, fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

SFX-52



Binocular stereomicroscope equipped with **turnable objective** (1x-3x), **360° rotating head**, fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

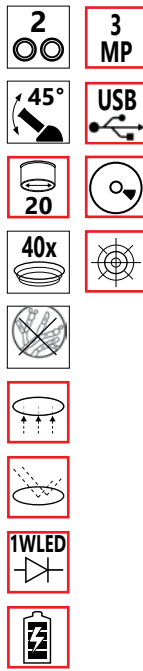
SFX/STEREO Series - Range

SFX-91



Binocular stereomicroscope equipped with **turnable objective with 3 magnifications** (1x-2x-4x), precision fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

SFX-91D



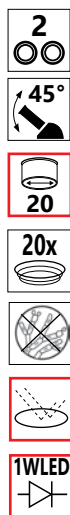
Digital binocular stereomicroscope equipped with **turnable objective with 3 magnifications** (1x-2x-4x), precision fixed arm with handle, and **incredibly bright and uniform illumination** (transmitted and incident), settable through the **exclusive touch control**. Powered by **rechargeable batteries**.

ST-30FX



Binocular stereomicroscope equipped with **turnable objective** (2x-4x), pillar stand, and **incredibly bright and uniform illumination** (transmitted and incident).

ST-50Led



Binocular stereomicroscope equipped with 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).

SFX/STEREO Series - Comparison chart

Model	Head	Eyepieces	Objective	Working Distance	Stand	Illumination
MS-2	Monocular, 45° inclined, 360° rotating	WF 10x/16	2x fixed	57 mm	Pillar with focus	Without illumination
STX	Binocular, vertical, fixed	WF 10x/16	2x fixed	67 mm	Pillar with focus	Incident: 0.1 W LED Powered by 2 AA batteries (not included)
SFX-31	Binocular, 45° inclined, fixed	WF 10x/20	2x – 4x selectable	57 mm	Pillar with focus	Incident: 1 W LED Transmitted: 1 W LED Dial brightness control Rechargeable batteries
SFX-32	Binocular, 45° inclined, fixed	WF 10x/20	1x – 3x selectable	57 mm	Pillar with focus	Incident: 1 W LED Transmitted: 1 W LED Dial brightness control Rechargeable batteries
SFX-33	Binocular, 45° inclined, fixed	WF 10x/20	2x – 4x selectable	57 mm	Fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
SFX-34	Binocular, 45° inclined, fixed	WF 10x/20	1x – 3x selectable	57 mm	Fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
SFX-51	Binocular, 45° inclined, 360° rotating	WF 10x/20	2x – 4x selectable	76 mm	Fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
SFX-52	Binocular, 45° inclined, 360° rotating	WF 10x/20	1x – 3x selectable	76 mm	Fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
SFX-91	Binocular, 45° inclined, fixed	WF 10x/20	1x – 2x – 4x selectable	60 mm	Precision fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
SFX-91D	Binocular, 45° inclined, 3 MP integrated camera	WF 10x/20	1x – 2x – 4x selectable	60 mm	Precision fixed with focus and handle	Incident: 1 W LED Transmitted: 1 W LED Touch brightness control Rechargeable batteries
ST-30FX	Binocular, 45° inclined, fixed	WF 10x/20	2x – 4x selectable	57 mm	Pillar with focus	Incident: 1 W LED Transmitted: 1 W LED
ST-50Led	Binocular, 45° inclined, fixed	WF 10x/20	2x fixed	119 mm	Overhanging with focus	Incident: 1 W LED on flexible arm





SFX/STEREO Series - Accessories

ACCESSORIES FOR STX AND MS-2

- DC-001 Plastic dust cover, small.
- ST-015 Glass stage, 60 mm diameter.
- M-005 Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
- 15104 Cleaning kit.

ACCESSORIES FOR OTHER MODELS OF SFX SERIES

- ST-001 Eyepieces (pair) WF 5x/22 mm.
- ST-002 Eyepieces (pair) WF 10x/20 mm.
- ST-003 Eyepieces (pair) WF 15x/15 mm.
- ST-004 Eyepieces (pair) WF 20x/13 mm.
- ST-005 Eyepiece micrometer WF 10x/20 mm, 10 mm/100 um.
- ST-025 1x Objective (ST-50Led).
- ST-026 3.5x Objective (ST-50Led).
- ST-041 Sample clip.
- ST-032 Eyecups (pair).
- ST-011 White/black object-plate, diameter 60 mm.
- ST-012 White/black object-plate, diameter 95 mm (for ST-30FX).
- ST-014 Glass stage, diameter 95 mm (for ST-30FX).
- ST-015 Glass stage, diameter 60 mm.
- DC-001 Plastic dust cover, small (for all, except ST-50Led).
- DC-002 Plastic dust cover, medium (for ST-50Led).
- M-005 Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
- 15104 Cleaning kit.

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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OPTIKA[®]
M I C R O S C O P E S
I T A L Y

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
- » 20 mm 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

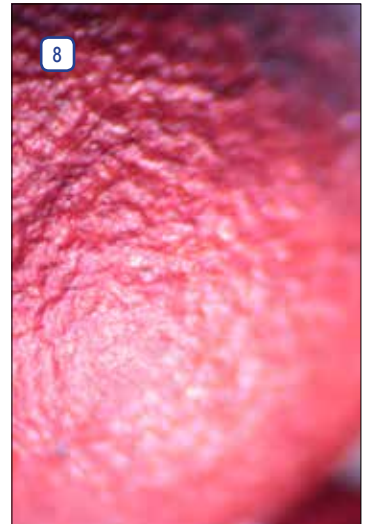
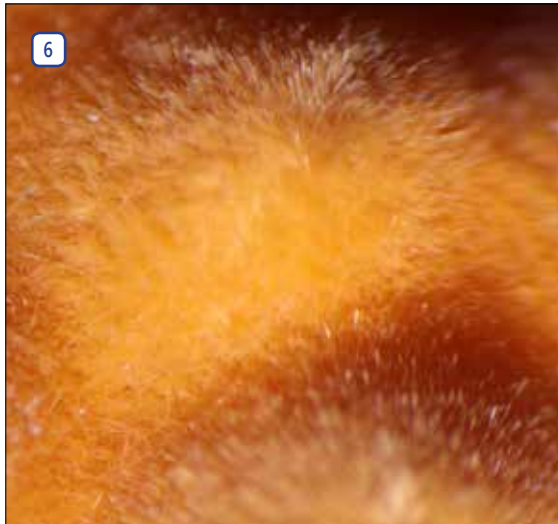
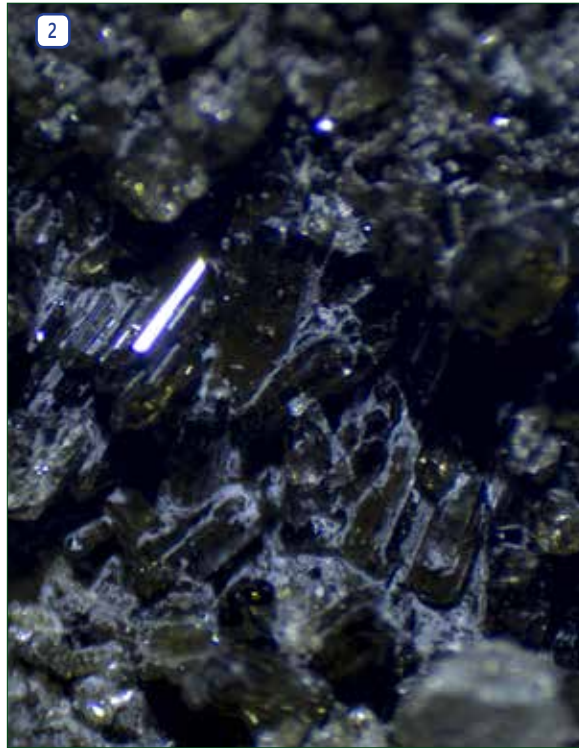
Money & energy saving thanks to LED long lifetime (50.000 hours, 20 years in case of 8 hours/day) which is more than 20 times compared to a standard halogen bulb. LED illumination is available as transmitted and incident illuminators.



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:

WF 10x/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:

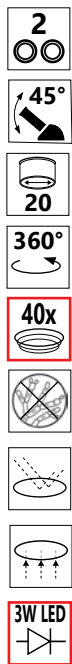
Double illuminator for incident and transmitted light fitted with two high-efficiency LED light sources with light intensity adjustment.

The angle of the incident illuminator is adjustable.

Color temperature: 6.300K.

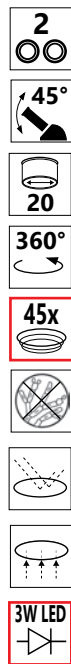
LAB Series - Range

LAB-10



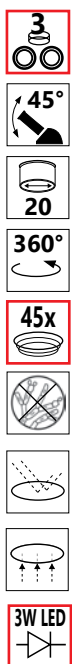
Dual selectable magnification (2x and 4x) with LED incident and transmitted illumination, combining bright and uniform illumination with low consumption.

LAB-20



Continuous zoom magnification (0.7x ...4.5x) with LED incident and transmitted illumination, combining bright and uniform illumination with low consumption.

LAB-30



Continuous zoom magnification (0.7x ...4.5x) 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

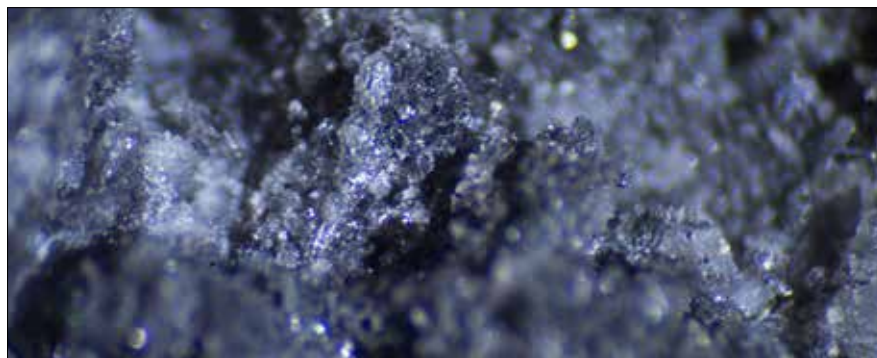
Eyeiece	5x (ST-001.1)		10x (ST-401)		15x (ST-402)		20x (ST-403)	
Field number (mm)	22		20		15		10	
Additional lens	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
0.5x	1.75x – 11.25x	62.86-9.78	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.

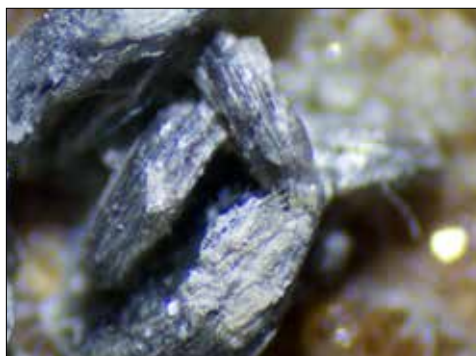


Vesuviana - LAB-20 - 2x zoom

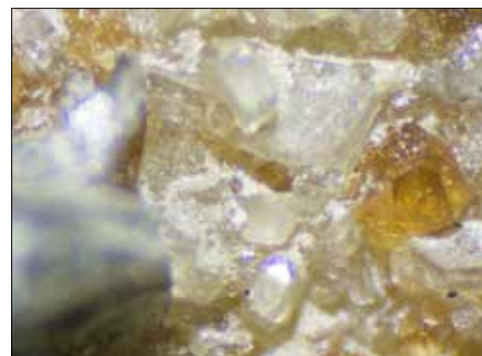
LAB Series - Zoom comparison



Azurite - LAB-20 - 1x zoom



Azurite - LAB-20 - 2x zoom

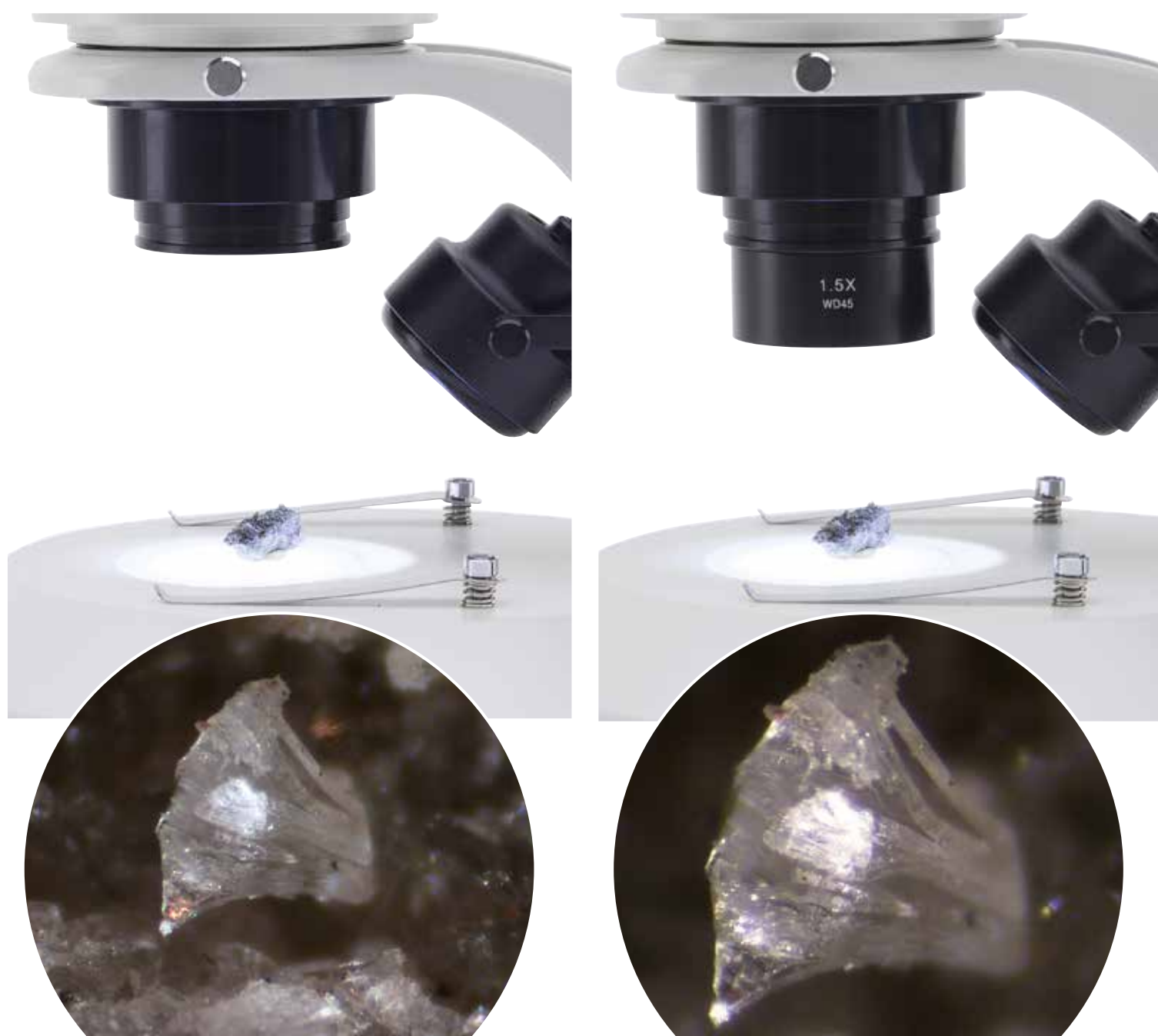


Azurite - LAB-20 - 4.5x zoom

LAB Series - Comparison chart

Model	Head	Eyepiece	Objectives	Working Distance	Stand	Illuminator
LAB-10	Binocular, 45° inclined, 360° rotating	WF 10x/20	2x – 4x selectable	80 mm	Fixed with focus and handle	Incident: 3 W LED Transmitted: 3 W LED Manual brightness control
LAB-20	Binocular, 45° inclined, 360° rotating	WF 10x/20	0.7x – 4.5x zoom	85 mm	Fixed with focus and handle	Incident: 3 W LED Transmitted: 3 W LED Manual brightness control
LAB-30	Trinocular, 45° inclined, 360° rotating	WF 10x/20	0.7x – 4.5x zoom	85 mm	Fixed with focus and handle	Incident: 3 W LED Transmitted: 3 W LED Manual brightness control

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) WF 5x/22 mm.
- ST-401 Eyepieces (pair) WF 10x/20 mm.
- ST-402 Eyepieces (pair) WF 15x/15 mm.
- ST-403 Eyepieces (pair) WF 20x/10 mm.
- ST-405 Eyepiece micrometer WF 10x/20 mm, 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, 30 mm (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.

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