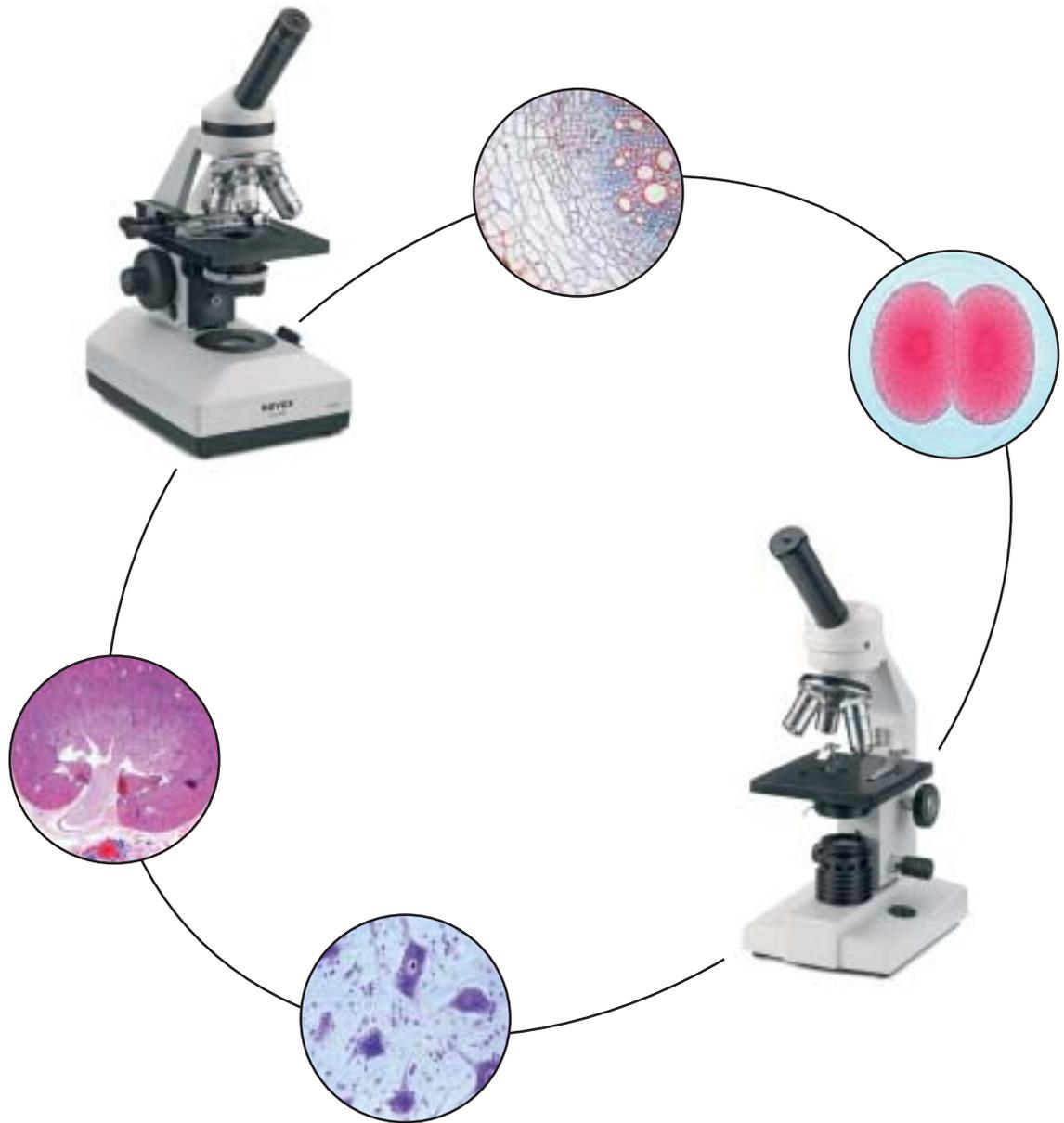


NOVEX[®]



EDUCATION

SH-45
FL-100

Biological Microscopes

Biological microscopes for education

The Novex biological microscopes FL-100 and SH-45 are perfect for students and amateur biologists alike. The excellent optical and mechanical construction of these microscopes together with their attractive prices makes them ideal to introduce students to nature sciences. With these robust microscopes you can study the cells of plants and animal tissues. Transparent specimens like wings of a mosquito, a hair, a piece of skin or a drop of water with paramecia can easily be placed between an object and cover glass and examined.

Magnification

The total magnification can be calculated from the magnification of the eyepiece multiplied by the magnification of the objective. All microscopes in this brochure are equipped with one wide field eyepiece WF 10x/18 with fixed pointer and three objectives 4x, 10x and 40x to achieve magnifications of 40x, 100x and 400x. Magnifications of 200x and 600x can be achieved using 20x and 60x objectives that are available for the FL-100, FL-100 H, SH-45 and SH-45 LED. The SH-45 and SH-45 LED can also be equipped with a 100x objective for magnifications of up to 1000x.

Numerical Aperture

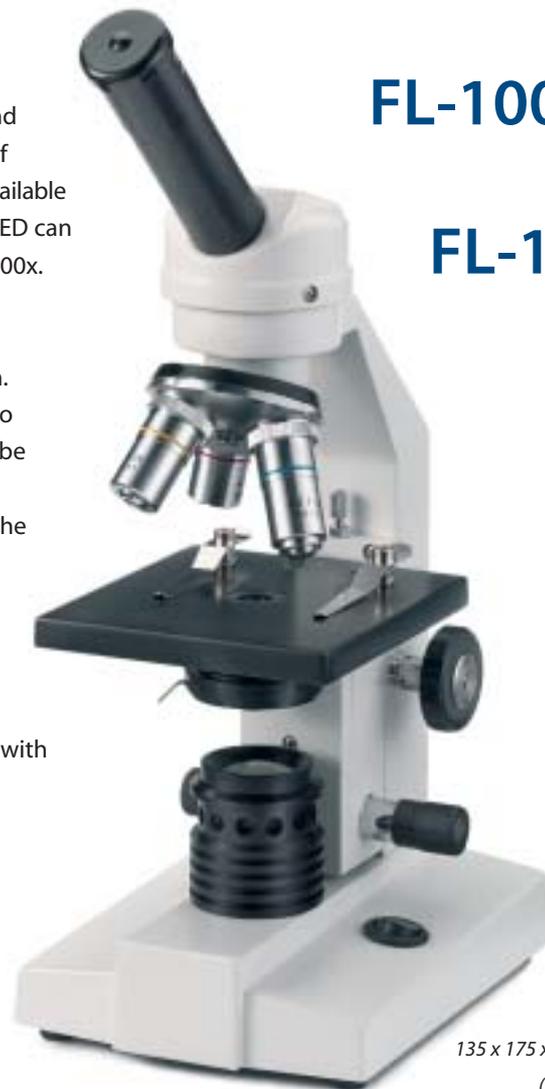
The numerical aperture (N.A.) of the objective indicates the resolution. The higher the numerical aperture the better you can differentiate two points close to each other. It is essential to use a height adjustable Abbe condenser for microscopes with magnifications above 600x. This condenser is mounted below the mechanical stage and focuses the exact amount of light needed through the specimen, which results in a very detailed image.

Condenser

The FL-100 and FL-100 H are equipped with a single lens condenser N.A. 0.65 with iris diaphragm. The SH-45 and SH-45 LED are equipped with a height adjustable Abbe condenser N.A. 1.25.

Focussing

Course and fine adjustment knobs provide easy and precise focusing. In the case of the models SH-45 and SH-45 LED these knobs are coaxial, which means that they are mounted on a common axis.



FL-100 H
80.300

FL-100
80.200

135 x 175 x 365 mm
(B x D x H)

Model	Viewing Head	Eyepiece	Objective	Stage
FL-100 80.200	Mono 160mm, 45° 360° rotatable	WF10x/18	DIN achromatic 4x /0.10, 10x/0.25, S40x/0.65	100 x 120 mm optional X-Y stage
FL-100 H 80.300	Mono 160mm, 45° 360° rotatable	WF10x/18	DIN achromatic 4x /0.10, 10x/0.25, S40x/0.65	100 x 120 mm optional X-Y stage
SH-45 82.500	Mono 160mm, 45° 360° rotatable	WF10x/18	DIN achromatic 4x /0.10, 10x/0.25, S40x/0.65	120 x 120 mm with X-Y stage
SH-45 LED 82.600	Mono 160mm, 45° 360° rotatable	WF10x/18	DIN achromatic 4x /0.10, 10x/0.25, S40x/0.65	120 x 120 mm with X-Y stage

and the amateur biologist

Objective Changer and Objectives

The objective changer of the FL-100 and FL-100 H models can take three objectives. The SH-45 models have an objective changer for mounting four DIN objectives. The S40x / 0.65 objective is spring-loaded to protect the specimen from damage.



X-Y stage

For magnifications of 400x and above it is recommended to use an X-Y positioning stage that enables the user to position the specimen slowly and smoothly under the objective. The SH-45 and SH-45 LED are both supplied with a 50 x 30 mm X-Y stage on which the control knobs are horizontally positioned. The FL-100 and FL-100 H microscopes that have a plain stage and object clamps can be optionally equipped with an attachable 50 x 30 mm mechanical stage.

Illumination

Good illumination for microscopes is crucial to get a detailed image of the specimen. Too low light intensity will result in low resolution.

Depending on the application you can choose a 20 Watt Tungsten lamp, a 10 Watt halogen lamp or a microscope with a LED illumination.

With a LED illumination with a colour temperature of 4300° K no heat is developed. The microscope can be used in the field since it is equipped with rechargeable batteries. The LED version is supplied with an adapter for 230 Volt operations.

A halogen illumination with a colour temperature of 3100° K produces a high intensity light and is very close to the colour spectrum of daylight.

The FL-100 has a Tungsten lamp illumination.
The FL-100 H has a halogen illumination.
The SH-45 has an adjustable halogen illumination.
The SH-45 LED has an adjustable LED illumination.

SH-45 LED

82.600

SH-45

82.500



150 x 215 x 380 mm
(B x D x H)

Condenser

fixed, N.A. 0.65 with iris diaphragm, filter holder and daylight filter

fixed, N.A. 0.65 with iris diaphragm, filter holder and daylight filter

height adjustable N.A.1.25 with diaphragm, filter holder and neutral density filter

height adjustable N.A.1.25 with diaphragm, filter holder and neutral density filter

Focusing

fine and coarse adjustments, non coaxial ⁽¹⁾

fine and coarse adjustments, non coaxial ⁽¹⁾

fine and coarse adjustments, coaxial

fine and coarse adjustments, coaxial

Safety

adjustable

adjustable

fixed

fixed

Illumination

Tungsten lamp
230 Volt 20 Watt

Halogen lamp
12 Volt 10 Watt

Halogen lamp
12 Volt 10 Watt adjustable

LED adjustable with
rechargeable batteries

⁽¹⁾ coarse adjustment with friction control

Accessories

Eyepiece

- 80.885 Wide Field eyepiece HWF 10x/18, suitable for users wearing spectacles
- 80.873 Wide Field eyepiece WF 15x/12
- 80.882 Wide Field eyepiece WF 20x/10
- 80.574 Eyepiece WF10/18 with adjustable lens and measuring graticule 10 mm / 100 parts
- 80.861 Photo eyepiece PH 2.5x/10

Objective

- 80.894 Achromatic DIN objective S20x N.A. 0.40 for FL-100 / FL-100 H
- 80.899 Achromatic DIN objective S60x N.A.0.85 for FL-100 / FL-100 H
- 82.894 Achromatic DIN objective S20x N.A.0.40 for SH-45 / SH-45 LED
- 82.899 Achromatic DIN objective S60x N.A.0.85 for SH-45 / SH-45 LED
- 82.900 Achromatic DIN objective S100x N.A.1.25 for SH-45 / SH-45 LED

Miscellaneous

- 80.839 Eyecup, suitable for all eyepieces with \varnothing 28 mm
- 80.852 Polarisation set. Analyser fits in eyepiece and polariser fits into filter holder
- 80.853 Polarisation set. Analyser fits over eyepiece. The polariser is to be mounted into removable stage. Can be rotated over 360° with 5° resolution
- 80.810 Stage micrometer 1 mm / 100 parts
- 80.889 Spare bulb 230 Volt 20 Watt for FL-100
- 50.882 Spare halogen bulb 12 Volt 10 Watt for FL-100 H and SH-45
- 80.927 Adapter for reflex SLR camera with T2 thread. To be used with photo eyepiece
80.861 T2 rings on request
- 80.973 Positioning X-Y stage, 50 x30 mm for FL-100 and FL-100H
- 80.960 Wooden cabinet with handle and lock FL-100 and FL-100 H
- 80.961 Plastic cabinet with lock for FL-100 and FL-100 H
- 82.960 Wooden cabinet with handle and lock for SH-45 and SH-45 LED



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