BIOLOGICAL MICROSCOPE

Smart 44

Intelligent. Convenient. Comfortable. Efficient.



Clarity across the field.

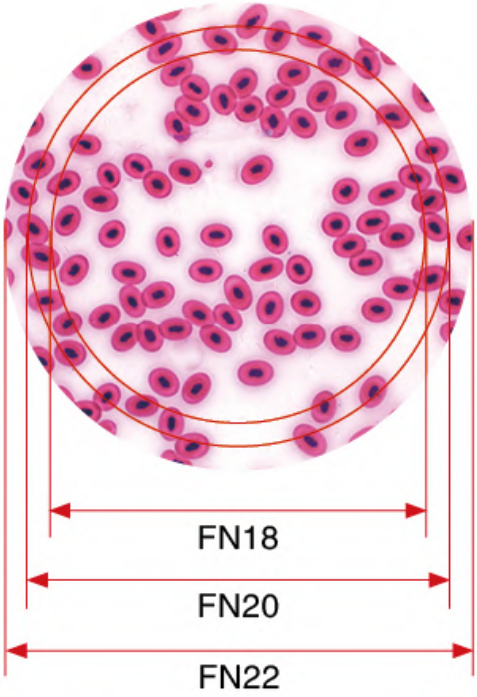
Smart 44 is designed for universities and laboratories of biomedicine and other fields, for teaching experiments and medical testing. Innovative design, high quality and convenient operation provide a simple, comfortable experience.

Outstanding infinity color-corrected optics

The infinity color-corrected system, professional plan achromatic objectives and advanced microscopy technology provide high-resolution, high-definition, high-contrast microscopic images.

22 mm wide field

A 10X eyepiece achieves a 22 mm field of view for efficient observation. Professional high-eye-point wide-field plan eyepieces correct edge distortion and chromatic aberration. The source comparison shows FN 18, FN 20 and FN 22.





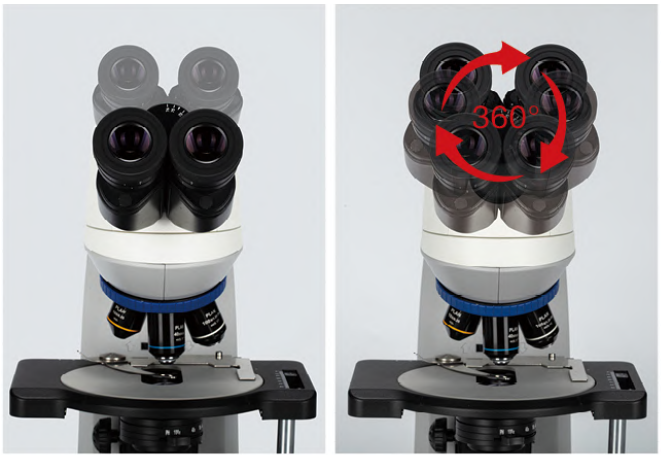


Complete accessories support bright field, dark field and phase contrast. Intelligent lighting management and ECO operation help make work easy and efficient.

Comfort in every detail.

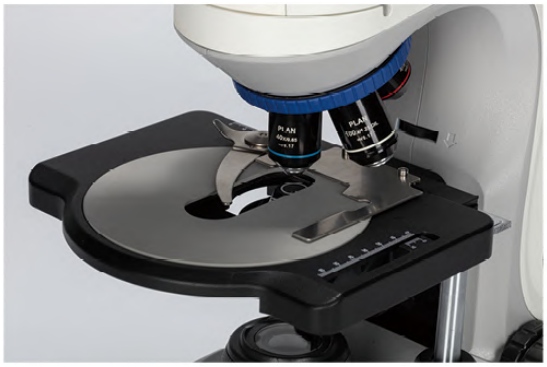
Rotatable viewing tube

The gemel viewing tube rotates through 360°. Adjustable pupil distance and eye-point height accommodate operators of different heights for flexible, comfortable use.



Ceramic rackless stage

Double-layer mechanical stage with a large arc shape and no angular edges. Ceramic paint provides hardness and corrosion resistance. Damping-type double clips hold two slides for inspection and comparative analysis.











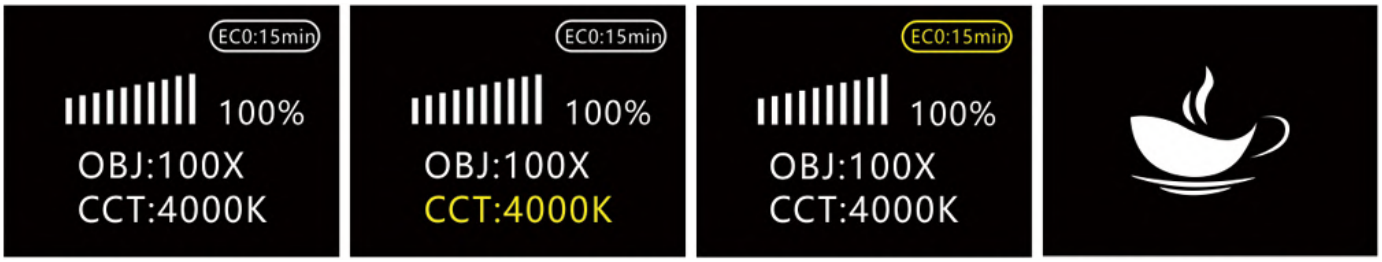
A secure carrying handle, fully concealed locking design and low-position coaxial coarse/fine focusing improve comfort and safety. Rear storage keeps the instrument tidy, saves storage space and improves portability.

Intelligent illumination.



ECO control and front LCD

Built-in ECO mode enters standby after 30 minutes without operation; touch the dimming knob to wake the light source. The front LCD displays brightness, color temperature and magnification. A hibernation prompt can be cancelled manually; the waiting time is adjustable from 5 to 60 minutes.



Screen: ECO duration, brightness, objective magnification and color temperature. Long press the dimming hand wheel to adjust 3000K-7000K. Short press to set ECO duration. A coffee-cup reminder appears one minute before standby.



Optional brightness memory

An optional coded nosepiece remembers the illumination brightness of each objective. Adjust each objective independently; automatic recall improves efficiency and reduces visual fatigue.





Power beyond the outlet

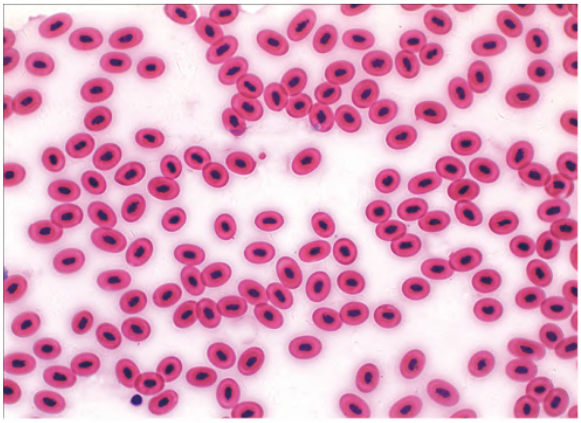
Type-C accepts a portable battery for outdoor use or power outages. The standard USB port charges a phone or tablet. The source images show both the portable battery connection and phone/tablet charging.

Three ways to see more.

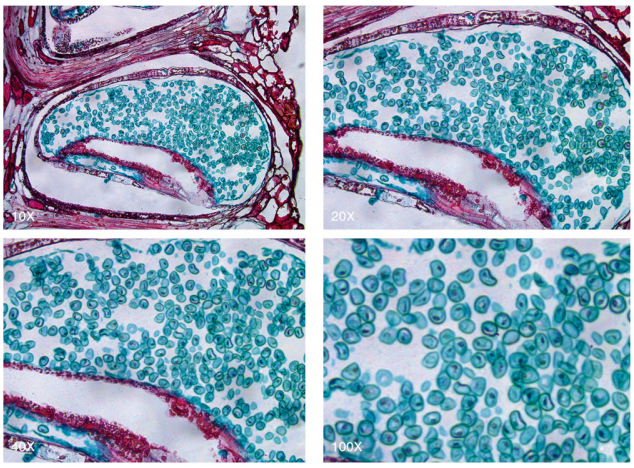
Bright field, dark field and phase contrast meet routine teaching and experimental observation needs.

Bright field

Professional plan achromatic objectives with Koehler illumination: adjust the aperture and field diaphragms for the best image. Obtain high resolution and contrast at low or high magnification.



Blood cell · 20X · Bright field

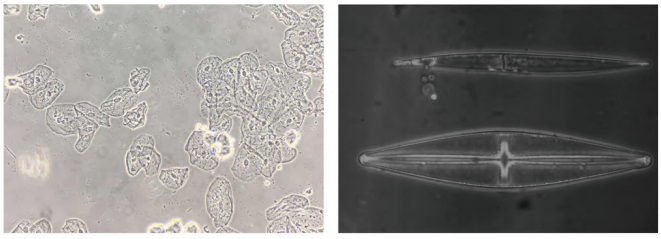


Male tapeworm transverse cleavage · Bright field

Phase contrast

For high-transparency samples such as cells, bacteria and other tiny transparent objects in biological specimens.

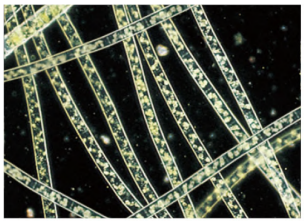




Oral epithelial cells · 40X · Phase contrast
Diatom · 20X · Phase contrast

Dark field

Insert the dark-field kit into the condenser socket and push its diaphragm into the optical path. No special condenser replacement is needed. Use any 4X-40X objective to observe protozoa, bacterial flagella, spirochetes and other substances.

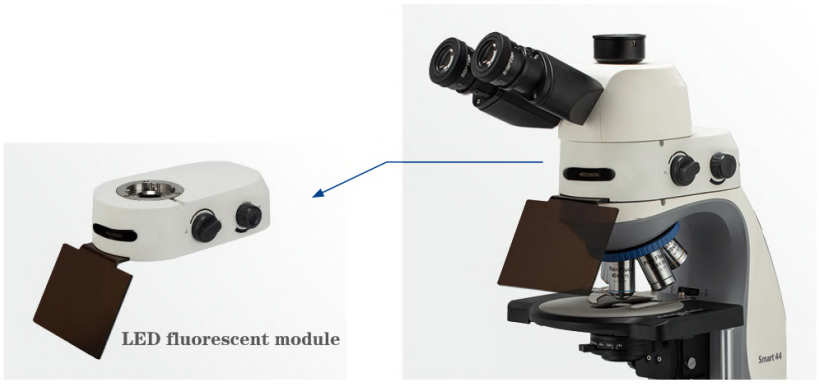




Watermill · 20X · Dark field

Stable light. Flexible control.

Highly stable, low-radiation, ultra-long-life LED fluorescent modules support efficient, professional diagnostic work. The reflected LED device simplifies fluorescence operation for simple, safe, efficient microscopy.





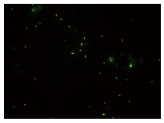
Brightness and observation switching

Adjust the light-source knob for each specimen. Rotate the BF/FL switch to change between transmitted bright-field illumination and reflected fluorescence. Fluorescence supports TB detection, immunofluorescence analysis and in-vivo cell observation; bright field supports routine pathological testing and laboratory observation.

Built-in 12V/1A power supply directly powers fluorescence illumination for easy connection and safe use.

LED module	Central wavelength	Application
UV4 long pass	385 nm	DAPI / Hoechst 33342
B4 TB-specific	455 nm	Auramine O / wtGFP
B1 band pass	470 nm	GFP / FITC
G1 band pass	560 nm	TexasRED / Cy3.5

Other intermediate LED modules can be selected to customer requirements. Additional B2 long-pass configuration is listed in the complete specifications.





Original fluorescence specimen and LED module components.

Connected observation.



Multifunctional digital camera module

USB 3.0 and Wi-Fi output provide progressive scanning and high-quality microscopic images. The Wi-Fi module supports remote full-resolution photography and multiple terminal connections for multi-viewing. Contact-point digital power makes operation convenient.





Selectable viewing heads

A trinocular tube accepts a camera to send binocular observations to a monitor or computer for image analysis, processing, preservation or transmission. Digital heads support built-in or external cameras, Wi-Fi or image output, remote full-resolution photography and multiple viewers.



Special C-mount and photo tube connect a digital camera for quick image capture.

Choose the right optics.



Infinity plan achromatic

Improves planarity and contrast with correction of chromatic aberrations. Large numerical apertures deliver high-definition, high-contrast microscopy.



Infinity plan semi-apochromatic

Designed for fluorescence: vivid, clear images, a pure black background and strong UV fluorescence performance for professional observation of cells and pathological sections.



Infinity plan achromatic phase contrast

Adds phase contrast to bright-field observation for high-definition, high-contrast images. Especially suitable for colorless transparent or light-colored cells.

Online instruction and operation guide

Easy access to online video instruction and an operation guide supports students' independent learning skills.



Original manufacturer guide interface shown as a source reference.

Complete configurations.

Component / option	Specification
Model	Smart 44 biological microscope
Optical system	Infinity color-corrected optical system
Viewing head · binocular	30° gemel binocular, 360° rotatable; adjustable eye-point height adapts to operators of different heights.
Viewing head · trinocular	30° gemel trinocular tube, 360° rotatable; spectroscopical ratio R:T = 50:50 or 80:20; adjustable eye-point height.
Viewing head · USB digital	30° gemel trinocular tube with built-in gemel digital viewing head; 360° rotatable; adjustable eye-point height. Selectable built-in 6.3M, 12M or 20M digital modules; USB 3.0 output.
Viewing head · network digital	30° inclined built-in gemel digital head, 360° rotatable; adjustable eye-point height. Optional built-in 16M or 20M camera; Wi-Fi or RJ45 network output. Remote full-resolution photography; Hotspot/Client mode switching; multi-viewer support.
Eyepiece · 20 mm	Wide-field plan PL 10X/20 mm, with reticle; adjustable diopter.
Eyepiece · 22 mm	Wide-field plan PL 10X/22 mm, with reticle or grid plate; adjustable diopter.
Plan achromatic objectives	Infinity plan achromatic: 2X, 4X, 10X, 20X, 40X, 60X, 100X.
Phase contrast objectives	Infinity plan achromatic phase contrast: 10X, 20X, 40X, 100X.
Fluorescence objectives	Infinity semi-apochromatic fluorescence: 4X, 10X, 20X, 40X, 100X.
Nosepiece · standard	Quintuple nosepiece.
Nosepiece · memory option	Quintuple nosepiece with brightness memory.
Stage	Double-layer mechanical ceramic-paint stage; precision 0.1 mm; X-axis rackless; clips for two slides; moving range 78 × 51 mm.
Condenser	N.A. 1.25 Koehler illuminator condenser, with phase contrast and dark-field accessory socket and aperture diaphragm.

Viewing heads, eyepieces, objectives and nosepieces are selectable configurations as listed by the supplied source.

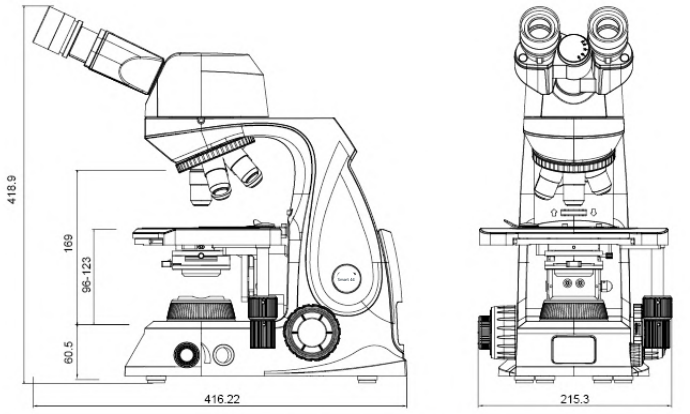
Light, power and accessories.

Component / option	Specification
B4 TB LED fluorescence	TB module; intensity adjustment knob; BF/FL switching knob; central wavelength 455 nm.
B1 band-pass LED fluorescence	Band-pass filter module; intensity adjustment knob; BF/FL switching knob; central wavelength 470 nm.
B2 long-pass LED fluorescence	Long-pass filter module; intensity adjustment knob; BF/FL switching knob; central wavelength 470 nm.
G1 band-pass LED fluorescence	Band-pass filter module; intensity adjustment knob; BF/FL switching knob; central wavelength 560 nm.
UV4 long-pass LED fluorescence	Long-pass filter module; intensity adjustment knob; BF/FL switching knob; central wavelength 385 nm.
Illumination · 3 W configuration	100-240 V external transformer; 3 W LED with continuous intensity control. Type-C accepts a portable battery as power source. USB port charges a phone or tablet. ECO function. Body supplies power to fluorescent illuminator and Wi-Fi camera module.
Illumination · LCD / memory configuration	100-240 V external transformer; 3 W or 5 W LED with continuous intensity control. Type-C accepts a portable battery. USB port charges a phone or tablet. ECO energy-saving function, LCD display, objective brightness memory and color temperature adjustment: 3000K-7000K. Body supplies power to fluorescent illuminator and Wi-Fi camera module.
Camera accessories	0.35X, 0.5X, 0.65X or 1X camera adapter; adjustable focusing.
Other accessories	Frosted-glass accessories, dark-field accessories, phase contrast accessories, color filter, telescope (Ø30), high-precision / general-type micrometer with 0.01 mm scale value.

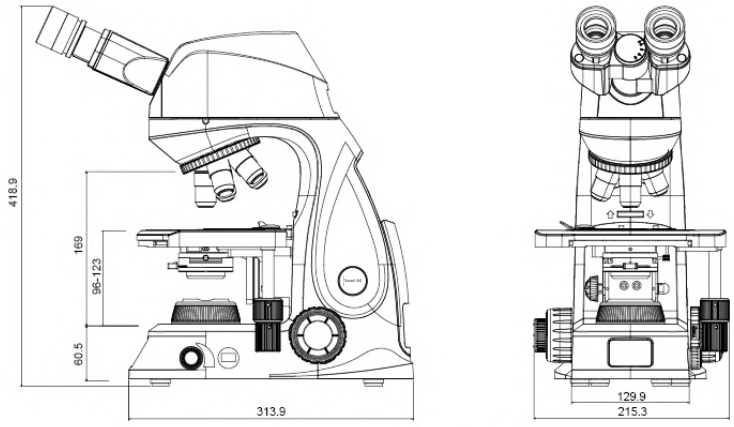
Specifications and appearance may change without additional notice.

Three instrument formats.

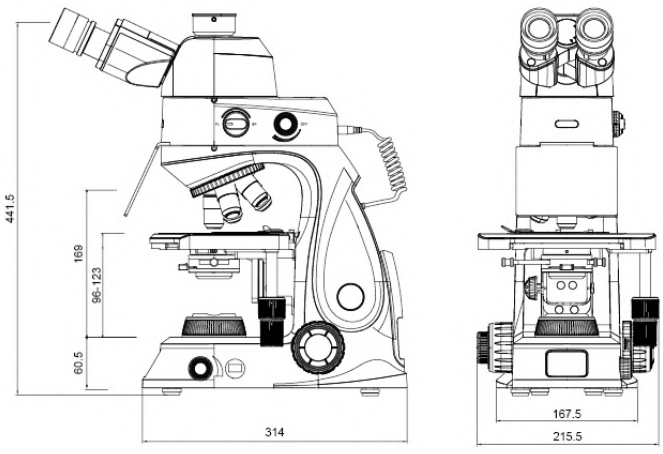
Original dimension drawings · all dimensions in millimeters.



Biological microscope



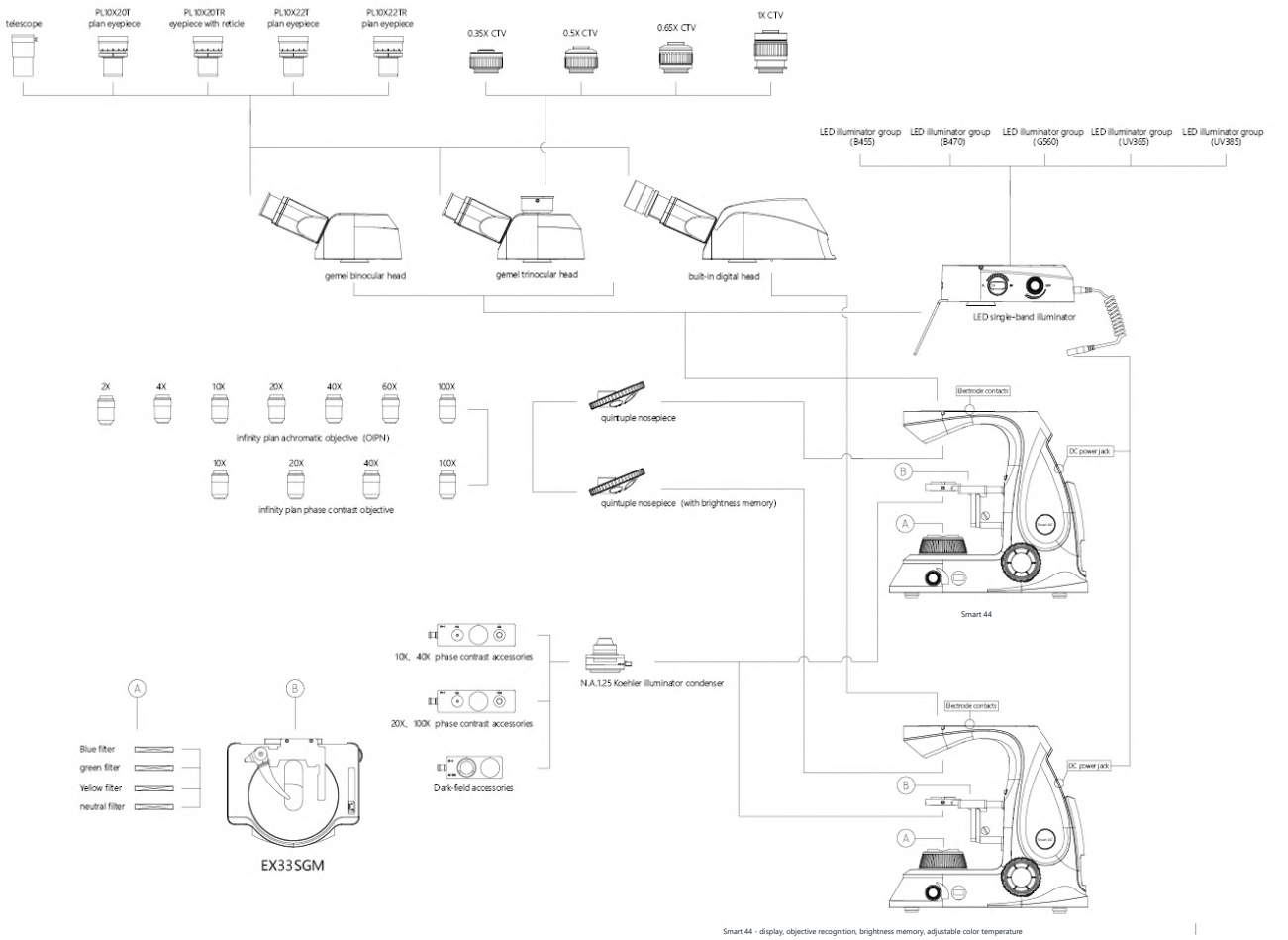
Digital microscope



Fluorescent microscope

Build your observation system.

Every source accessory identifier, objective, head, condenser connection and filter branch is retained in the original configuration drawing.



Manufacturer certification references



Certification marks reproduced from the supplied manufacturer catalogue as source references.