

OPTIKA[®]

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



B-380 Series

Laboratory Upright Microscopes

Just what you need. Right when you need it

ADVANCED UPRIGHT MICROSCOPES FOR UNIVERSITY, LABS & INDUSTRY

- » Perfect for all routine applications
- » Valuable solutions for routine laboratory needs
- » High precision resource for industrial & materials applications

ONE SINGLE SERIES, MULTIPLE FLEXIBLE SOLUTIONS

- » Brightfield, phase contrast, polarizing and metallurgical
- » Exclusive immersion darkfield system for fresh blood analysis
- » Traditional HBO lamp or ultra-convenient LED fluorescence



Improving The Most Important Aspects of Microscopy Experience

HIGH QUALITY, FLAT IMAGES CAPTURED WITH OUTSTANDING OPTICS

- » Binocular and trinocular heads with 20mm field number
- » True infinity optical system available (IOS)
- » Fully centerable condenser for precise light control

LABORATORY GRADE OPTICS

- » E-PLAN objectives, high numerical apertures
- » Planachromatic optics with more than 90% flat field
- » Significant optical correction, low field curvature and distortion



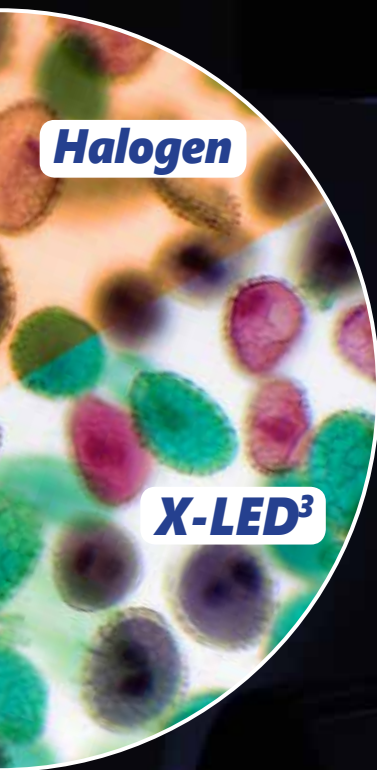
X-LED³ - Two Times Brighter Than Any Other

STATE-OF-THE-ART ILLUMINATION SYSTEM

- » Unmatched colour fidelity and brightness of your specimen
- » Special technology, able to double the light intensity
- » Constant pure-white colour temperature (6.300K)

CUT ELECTRICITY BILLS BY 90%

- » Money & energy saving
- » Low power consumption, only 3.6W
- » LED long lifetime (50.000 hours = 20 years at 8 hours/day usage)



Simplicity & Technology, Together Like Never Before

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!

EXCLUSIVE AUTOMATIC LIGHT CONTROL - **ALC**

- » Auto brightness adjustment when changing objective
- » Auto brightness adjustment when regulating diaphragm aperture
- » Auto brightness adjustment when processing another sample

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



A New Frontier in Ergonomic Product Design

ELEGANT DESIGN WITHSTANDING EVERYDAY USE















- » Ergonomic positioning of the main controls
- » Long lasting mechanical parts, rackless moving stage
- » Maintenance-free illumination system

EASY TO CARRY, LIGHT, STEADY

- » Improving productivity, reducing fatigue
- » Increases job accuracy and quality
- » Easily portable, with comfortable handgrip



Icons

	Binocular		Rotating head 360°		Transmitted light
	Trinocular		Infinity-corrected optics		Polarized light
	Inclined head		Max. magnification		X-LED illuminator
	Field number		Anti-fungus treatment		Automatic light control
	Eyepiece with pointer		Incident light		

B-380 Series

Purposely Designed For Intense Use, Effortless

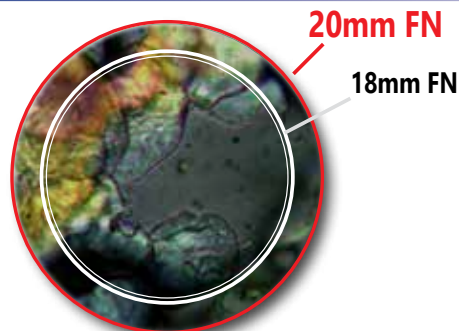
Full of features that help being more comfortable especially in case of long-term use. All the main controls are located close to each other to enable minimal movements and reinforce the advantages that the ergonomics brings to this series.



X-LED³ Exclusive Lighting Source

Achieve bright images, improved colour fidelity, pure white colour temperature, incredibly low energy consumptions and longer lifespan with the unique X-LED³ technology, able to double the light intensity for incomparable performance.

Relevant money and energy saving thanks to the incredibly low energy consumptions which allows you to cut the electricity bills by 90%!



Large Specimen View (20mm Field Number)

Enjoy a 20mm field of view ensures you to gain peripheral view and comfort when observing the specimen.

This means more efficient inspections and allows a natural and easy view, particularly needed in a laboratory environment.

ALC - Automatic Light Control, Only Available At OPTIKA

Incomparable Comfort With The Exclusive Automatic Light Control (ALC)

Automatic light intensity regulation. Seamless operation with instant brightness adjustment, automatically performed by the microscope for you. 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 **B-382PL-ALC**, **B-382PLi-ALC**, **B-382PH-ALC** & **B-382PHi-ALC**.

Laboratory Upright Microscopes

Safe And Convenient Operations

The rackless stage has been designed with a belt-driven mechanism that allows a smooth movement without any protruding part.

This design gives you a more compact solution and lowers any risk of injury after accidentally hitting the rack with your hands.



In fluorescence we can offer several options.

According to your application and to the fluorochromes you are using, we can identify the best solution.

Apart from that, generally speaking, we can identify the benefits of the HBO and LED fluorescence as following:

Traditional, HBO Fluorescence

- » The most used and diffused method, worldwide
- » Ideal for reasearch purposes

Innovative, LED Fluorescence

- » Recommended for routine applications
- » Cost-effective, money saving technology
 - » Eliminate warm-up/cool-down times
 - » Forget lamp replacement & centering





B-380 Series

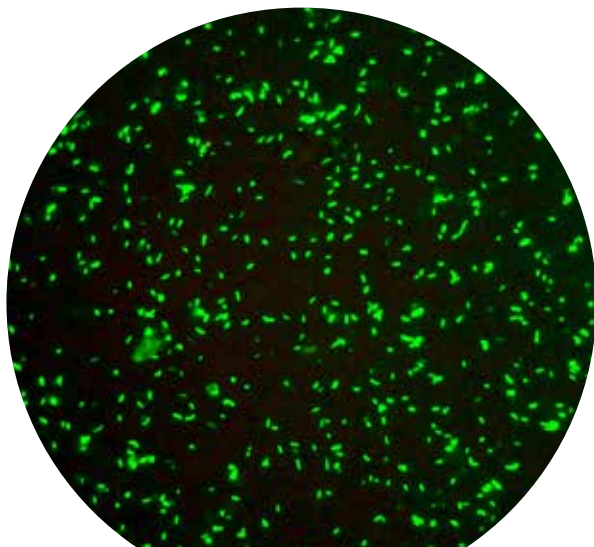


10x - Darkfield

M-185

Darkfield condenser

With M-185 optional condenser you can easily obtain a darkfield view for dry objectives.



50x - Fluorescence

M-335

Objective 50x/0.75 IOS PLAN MET

For applications where no cover slide is required (such as sputum smear analysis for tuberculosis diagnosis), the M-335 objective provides excellent results for stunning images.



Get the most of our accessories

M-181

Complete Phase Contrast Set with IOS PLAN obj. 10x, 20x, 40x, 100x, with Darkfield position

The B-380 series can be upgraded at any time with phase contrast kits (M-179 with PLAN objectives and M-181 with IOS PLAN objectives) including all the components you need to inspect transparent specimens such as microorganisms, thin tissue slices, lithographic patterns, fibers, glass, etc.



Blue filter



Green filter



Yellow filter



Frosted glass

M-975.1 Ring with blue filter;

Increase the colour temperature of light (toward the blue).

M-977.1 Ring with green filter;

Optimize the resolution of phase contrast.

M-979.1 Ring with yellow filter;

Decrease the colour temperature of light (toward the red).

M-989.1 Ring with frosted glass filter;

Increase the uniformity of illumination, even further.

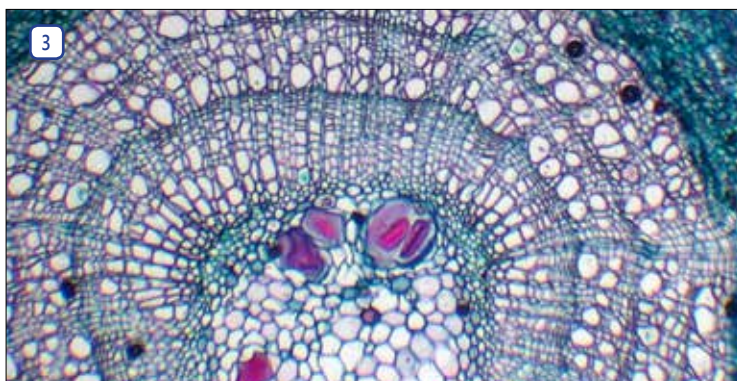
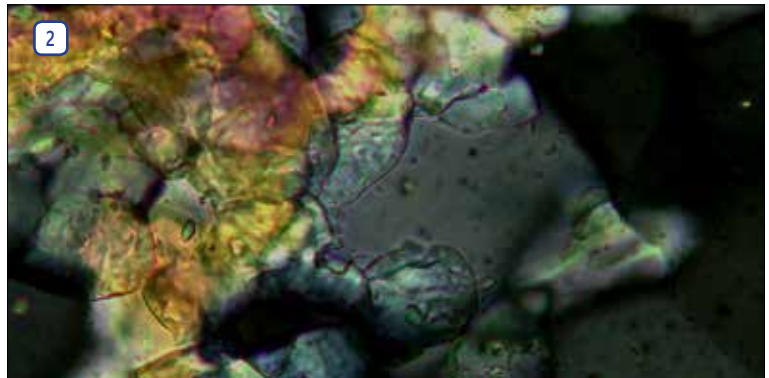
B-380 Series

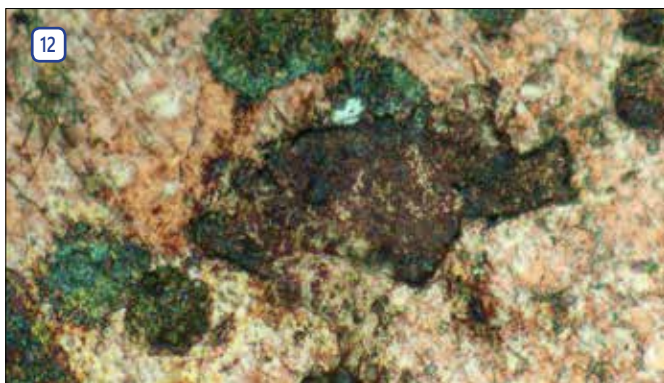
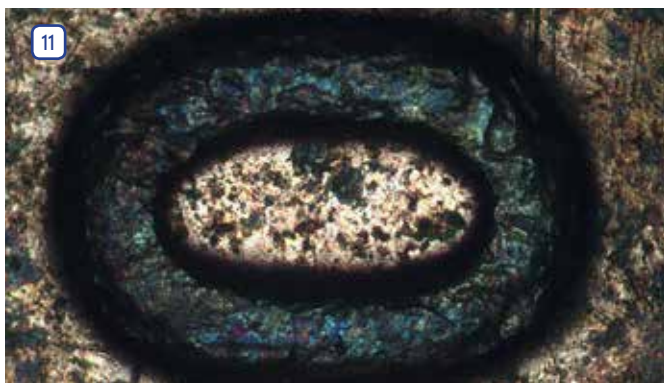
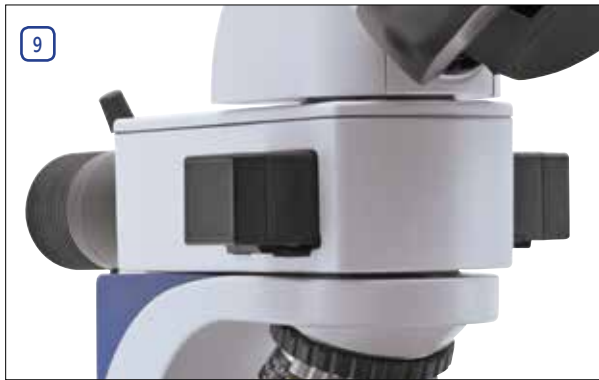
Applications

Some application examples showing the extreme versatility of B-380 Series in its several available configurations. Applications in education, biology, botany and simple material analysis. This series represents the best entry-level solution for the routine laboratory.

Legend

1. Planachromatic Phase Contrast objectives.
2. B-383POL tuff observed under polarized light.
3. Tilia three year stem at 4x magnification, B-383PL.
4. Tilia three year stem at 40x magnification, B-383PL.
5. B-380 head with built-in Automatic Light Control system.
6. Head with Siedentopf adjustment system.
7. B-383POL attachment with Bertrand lens.
8. Comfortable handle on the back.
9. B-383LD1 with LED fluorescence attachment.
10. B-383MET side view of X-LED incident light attachment.
11. Coin at 4x magnification, B-383MET.
12. Coin at 50x magnification, B-383MET.
13. Innovative design of B-380 series.





B-380 Series

BRIGHTFIELD

Transmitted brightfield illumination is one of the most commonly used observation method in optical microscopy, and is ideal for fixed, stained specimens or other types of samples having high natural absorption of visible light. B-380 Series is fitted with high-efficiency LED brightfield illuminator, for the best outcome when using this technique.

DARKFIELD

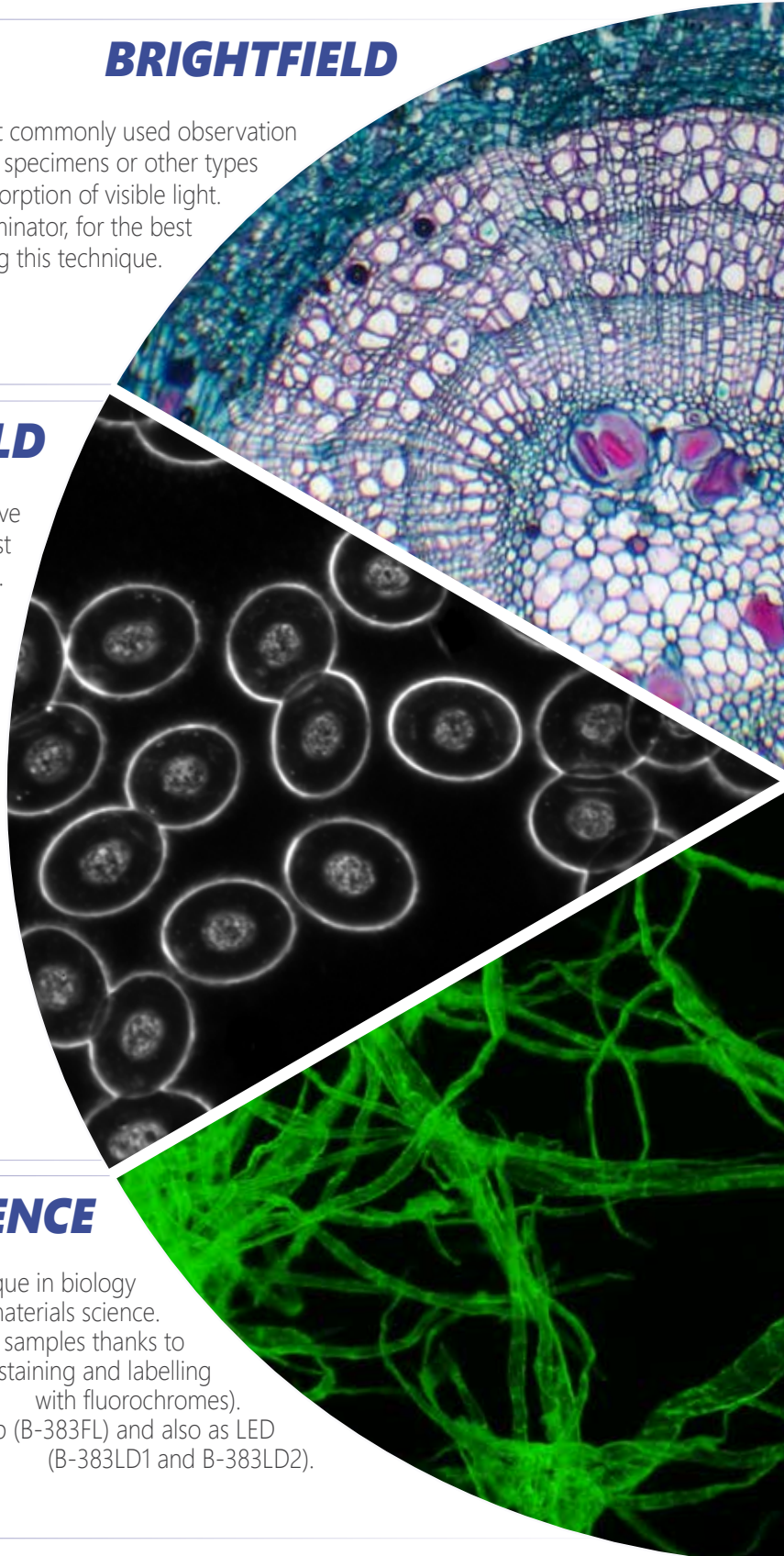
Dark Field illumination is a technique used to observe unstained samples causing them to appear brightly lit against a dark, almost purely black, background. B-383DK has a powerful LED illuminator built in the condenser and a "special" 100x Oil IRIS Objective, the ideal solution for fresh blood analysis.

FLUORESCENCE

The fluorescence microscopy is the most demanding technique in biology and the biomedical sciences, as well as in materials science.

This method is capable to study organic and inorganic samples thanks to primary fluorescence (auto-fluorescence) or secondary (staining and labelling with fluorochromes).

Fluorescence illuminators available as mercury lamp (B-383FL) and also as LED (B-383LD1 and B-383LD2).



Observation Methods



MATERIAL SCIENCE / METALLOGRAPHY

Reflected light microscopy is the method for observation of specimens that remain opaque even when ground to a thickness of few microns. The range of specimens falling into this category is incredibly wide and includes most metals, ores, ceramics, many polymers, semiconductors (unprocessed silicon, wafers, and integrated circuits), coal, plastics, paint, paper, wood, leather, glass inclusions, and a wide variety of specific materials.

POLARIZATION

The polarized light microscope is designed to observe specimens that are visible primarily due to their optical anisotropic or birefringent features.

Polarized light microscopy is perhaps best known for its applications in the geological sciences, which focusses primarily on the study of minerals in rock thin sections. However, a wide variety of other materials can be examined in polarized light, including both natural and industrial minerals, concrete, ceramics, mineral fibers, polymers, starch, wood, urea. The technique can be used both qualitatively and quantitatively with success, and is an outstanding tool for the materials sciences, geology, chemistry, biology, metallurgy, and even diagnostic (gout analysis).

PHASE CONTRAST

Phase-contrast microscopy is a particular technique applied in transparent, non-stainable, samples like culture of living cells, microorganisms, lithographic patterns, latex dispersions, fibers, asbestos and subcellular particles.

It reveals many cellular structures that are not visible with a simple brightfield microscope.

B-380 Series - Overview

This series incorporates all the experience gathered by OPTIKA Microscopes in the field of light microscopy, adapted specifically for routine laboratory brightfield applications. These microscopes are suitable for routine microscopy and have an ergonomic design for comfortable long-term use. All main controls are located close to each other, which enable operation with minimal movements, reducing the fatigue of the user. B-380 Series incorporates all the experience gathered by OPTIKA Microscopes in the field of light microscopy, adapted specifically for routine laboratory applications, industrial and material analysis.



Observation mode:

Brightfield, polarizing, fluorescence, phase contrast, darkfield.

Heads:

Binocular and trinocular, 30° inclined.

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

Interpupillary distance:

Adjustable between 48 and 75 mm.

Dioptric adjustment:

On the left eyepiece tube.

Eyepieces:

WF10x/20 mm.

Nosepiece:

Quintuple revolving nosepiece, rotation on ball bearings. B-383POL quadruple revolving nosepiece, with centering mechanism.

Objectives:

E-PLAN: B-382PL-ALC, B-383PL and B-383DK.

IOS E-PLAN: B-382PLi-ALC, B-382PLi, B-383LD1, B-383LD2, B-383FL.

PLAN PH: B-382PH-ALC, B-383PH.

IOS PLAN PH: B-382PHi-ALC, B-383PHi.

IOS PLAN MET: B-383MET.

IOS E-PLAN POL: B-383POL.

with an anti-fungus treatment.

Specimen stage:

B-382PL-ALC, B-383PL, B-382PH-ALC, B-383PH, B-383DK:

Double layer mechanical stage, 160x140mm, 78x54mm X-Y rackless movement.

B-382PLi-ALC, B-383PLi, B-382PHi-ALC, B-383PHi, B-383LD1, B-383LD2, B-383MET,

B-383FL: Double layer mechanical stage, 188x150mm, 78x54mm X-Y rackless movement.

B-383POL: 160mm diameter, 360° rotating.

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:

Brightfield models:

Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.

Phase contrast models:

Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield.

B-383DK:

Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.

Darkfield N.A. 1.36 with built-in X-LED³.

B-383POL:

Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.

With rotating polarizer filter.

Illumination:

All models: X-LED³.

ALC models: X-LED³ with automatic light control.

B-380 Series - Range

B-382PL-ALC



Automatic Light Control



Brightfield binocular microscope with **E-PLAN objectives**, moving stage and combining the **exclusive X-LED³** with **ALC** for great-looking, rich and high-quality specimen view.

B-383PL



Brightfield trinocular microscope with **E-PLAN objectives**, moving stage and the **exclusive X-LED³** for incredibly bright illumination.

B-382PLi-ALC



Automatic Light Control



Brightfield binocular microscope with **IOS E-PLAN (infinity corrected) objectives**, **rackless moving stage** and combining the **exclusive X-LED³** with **ALC** for great-looking, rich and high-quality specimen view.

B-383PLi

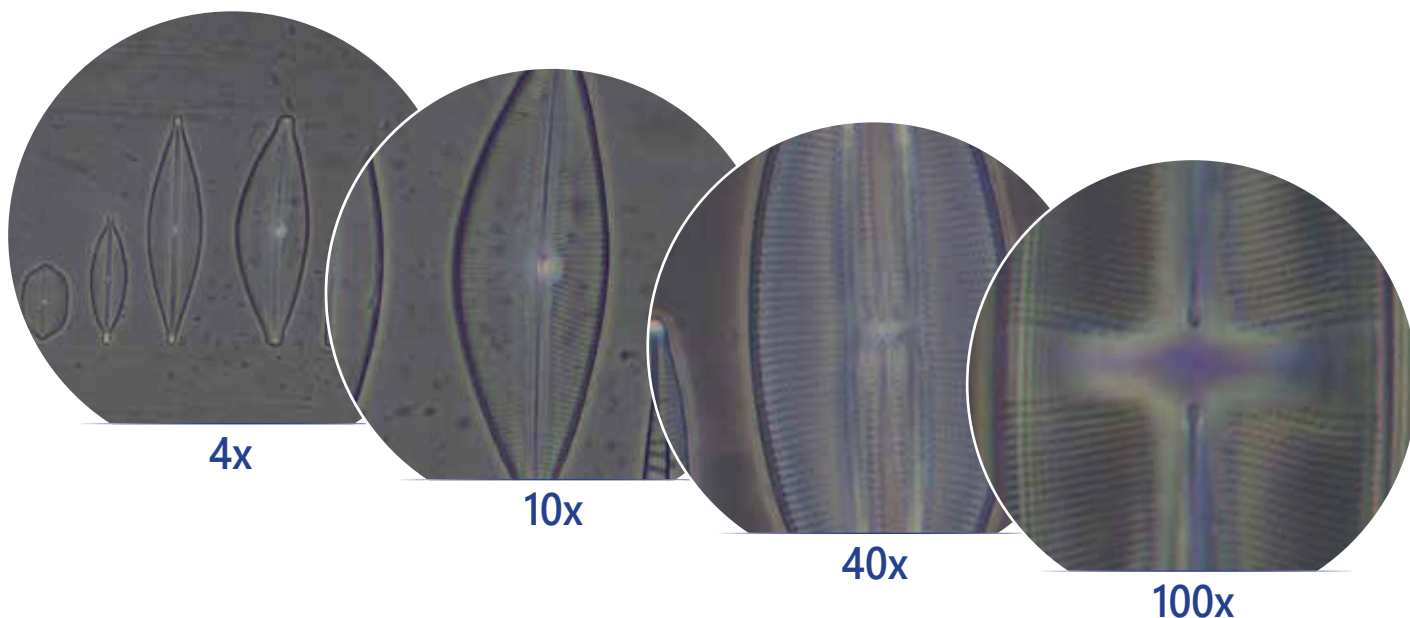


Brightfield trinocular microscope with **IOS E-PLAN (infinity corrected) objectives**, **rackless moving stage** and the **exclusive X-LED³** for incredibly bright illumination.

B-380 Series - Range

Phase contrast microscopes are widely used for examining such specimens as biological tissues. It is a type of light microscopy that enhances contrasts of transparent and colorless objects by influencing the optical path of light.

The microscope is equipped with a 5-position dedicated rotating condenser for brightfield (standard use), 10x/20x, 40x and 100x phase diaphragms, and a darkfield position for dry objectives.



B-382PH-ALC



Automatic Light Control



X-LED³

B-383PH



Phase contrast and brightfield binocular microscope with PLAN objectives, moving stage and combining the exclusive X-LED³ with ALC for great-looking, rich and high-quality specimen view.

Phase contrast and brightfield trinocular microscope with PLAN objectives, moving stage and the exclusive X-LED³ for incredibly bright illumination.

B-380 Series - Range

B-382PHi-ALC



Automatic Light Control



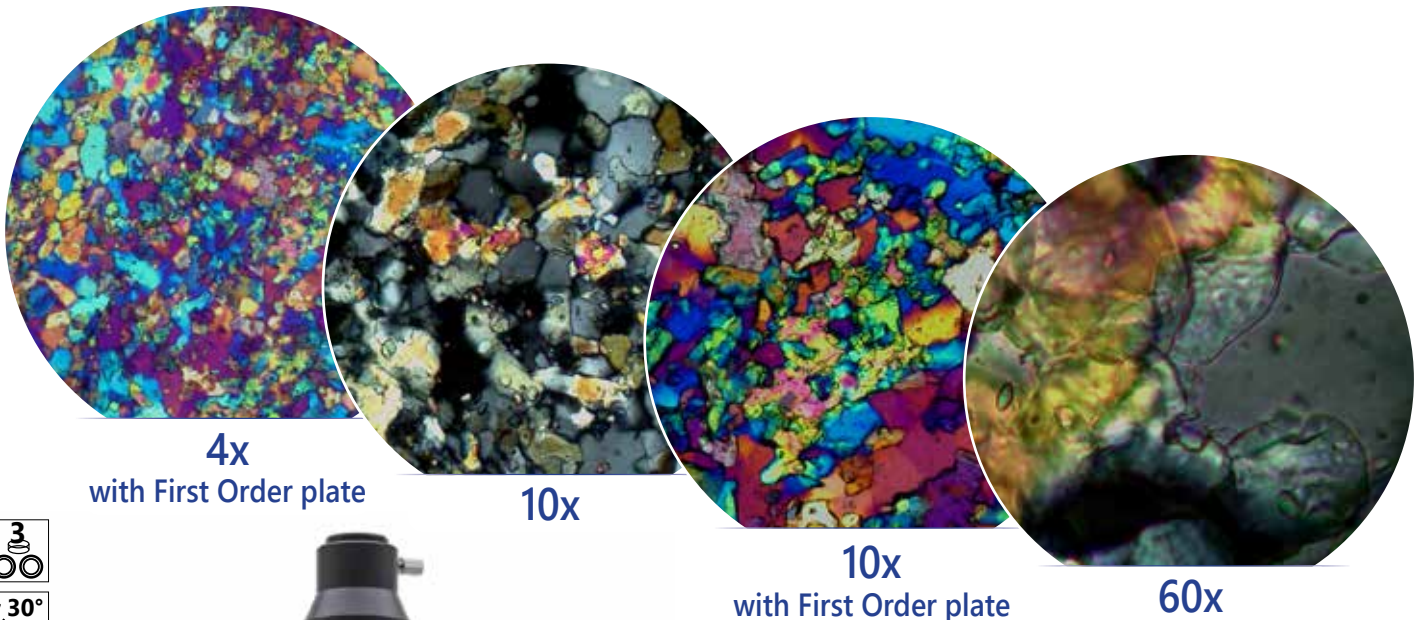
Phase contrast and brightfield binocular microscope with IOS (infinity corrected) PLAN objectives, rackless moving stage and combining the exclusive X-LED³ with ALC for great-looking, rich and high-quality specimen view.

Phase contrast and brightfield trinocular microscope with IOS (infinity corrected) PLAN objectives, rackless moving stage and the exclusive X-LED³ for incredibly bright illumination.



B-383POL - Polarized microscope

Biological microscope for **brightfield** and **polarizing light** observations with **infinity corrected optical** system and strain-free **E-PLAN objectives**. A complete system for your analysis, complete of polarizer and analyzer filters, Bertrand lens for conoscopic observation, compensator plates and high-precision rotatable stages. It comes with the exclusive X-LED³ illumination system to deliver bright and clear images, along with all the accessories to perform accurate polarization analysis in biology and materials science.

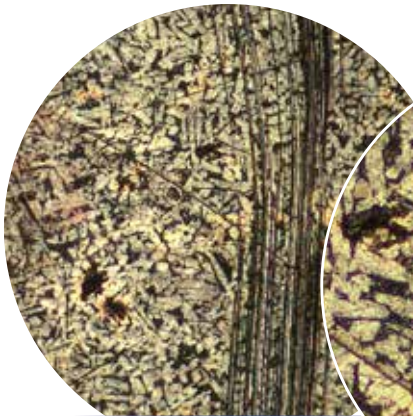


Part	Description
Polarizing attachment	0°-90° rotating analyzer filter. Tint plates included: 1° order red (λ), $\lambda/4$, quartz wedge.
Bertrand lens	Swing-out type; centerable.
Stage	160mm dia.; 360° rotating with stop knob and 0.1° Vernier scale.
Nosepiece	Quadruple revolving nosepiece, rotation on ball bearings. Centering system for each objective.
Objective	<ul style="list-style-type: none">- IOS E-PLAN POL objective 4x/0.10, W.D. 16.8 mm- IOS E-PLAN POL objective 10x/0.25, W.D. 5.8 mm- IOS E-PLAN POL objective 40x/0.65, W.D. 0.43 mm- IOS E-PLAN POL objective 60x/0.80, W.D. 0.14 mm All objectives are treated with an anti-fungus treatment.
Condenser	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable. With rotating polarizer filter.

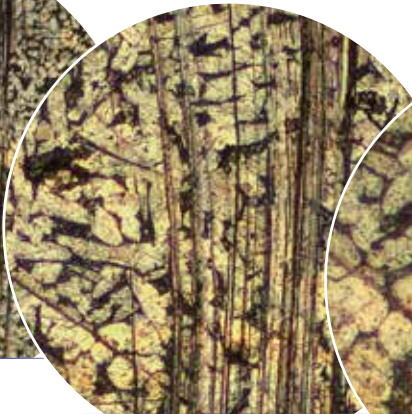
B-383MET - Metallographic microscope

Brightfield biological microscope with **infinity corrected optical system** and **PLAN objectives** and **metallurgical attachment** combining the **exclusive X-LED³** lighting source both for incident and transmitted illumination.

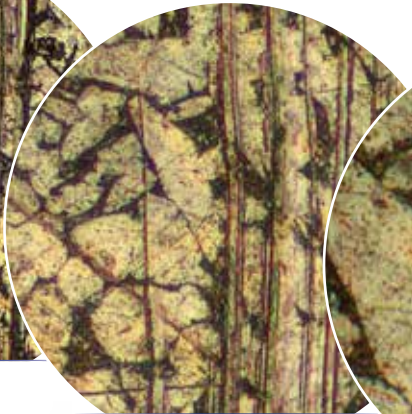
The NCG (no cover glass) objectives are especially designed for microscopy use **without a cover slip** ideal for metallographic samples and other opaque specimens.



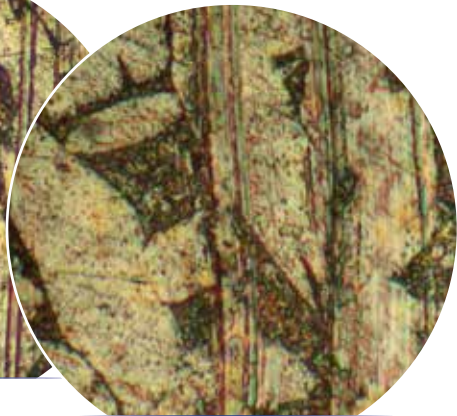
4x



10x



20x



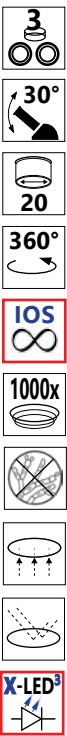
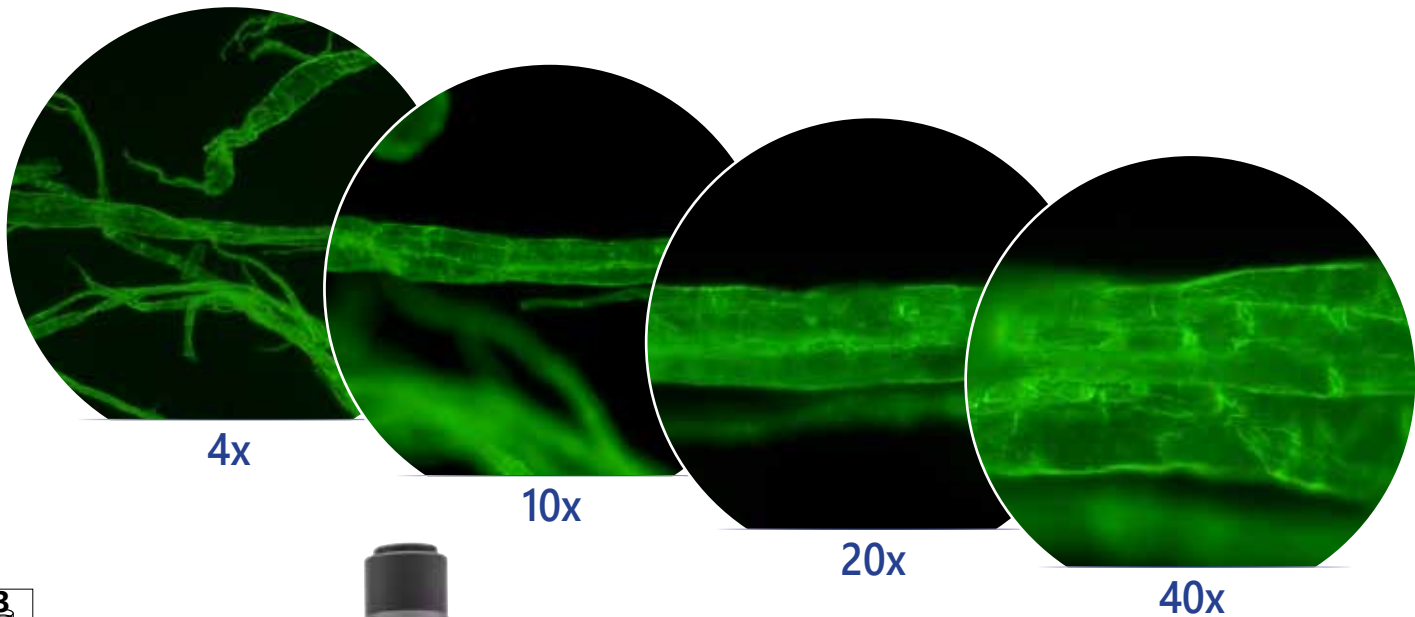
50x



Part	Description
Illumination	Transmitted and incident light: Light source type X-LED ³ with manual brightness control.
Incident light filters	Polarizer & analyzer filters.
Objectives	- IOS PLAN MET objective 4x/0.10, W.D. 17.3 mm - IOS PLAN MET objective 10x/0.25, W.D. 10 mm - IOS PLAN MET objective 20x/0.40, W.D. 5.8 mm - IOS PLAN MET objective 50x/0.75, W.D. 0.32 mm All objectives are treated with an anti-fungus treatment.

B-383LD1 - LED Fluorescence microscope

Entry-level laboratory biological microscope for **brightfield** and **fluorescence** observations with **infinity corrected optical system**, **E-PLAN objectives** and the **exclusive X-LED³** for great-looking, rich and high-quality specimen view.



The extremely powerful **LED fluorescence** illuminator is combined with **blue excitation filter set** for the visualization of the following fluorochromes: Acridine Yellow, Acridine Orange, Auramine, DiO, DTAF, FITC, GFP, YFP, etc.

LED fluorescence ensures **unparalleled convenience** as it eliminates the warm-up/cool-down times and all the inconveniences related lamp replacement and adjustment, ensuring over 50.000 hours of use and reduced power consumptions.

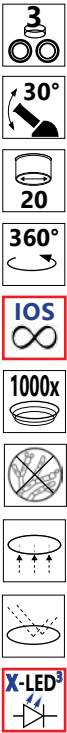
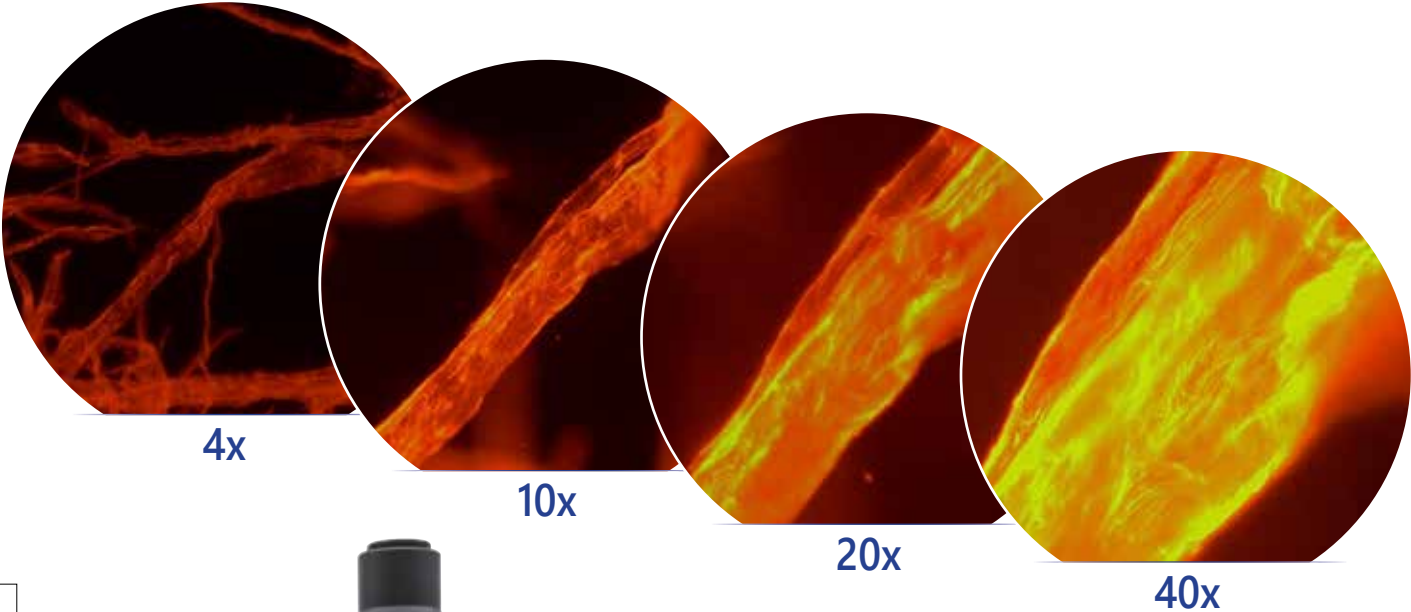
Part	Description
Illumination	Transmitted light: Light source type X-LED ³ with manual brightness control.
	Epi-fluorescence: High-power blue LED with manual brightness control.
Observation modes	Brightfield, Blue Fluorescence.
Objective	- IOS E-PLAN objective 4x/0.10, W.D. 16.8 mm
	- IOS E-PLAN objective 10x/0.25, W.D. 5.8 mm
Objective	- IOS E-PLAN objective 20x/0.40, W.D. 1.4 mm
	- IOS E-PLAN objective 40x/0.65, W.D. 0.43 mm
	- IOS E-PLAN objective 100x/1.25, W.D. 0.13 mm
All objectives are treated with an anti-fungus treatment.	
Filter Set	Single position fluorescence filter holder (blue).

Standard filterset

Name	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
B (Blue)	460 – 490	505	515LP

B-383LD2 - LED Fluorescence microscope

Laboratory biological microscope for **brightfield** and **fluorescence** observations with **infinity corrected optical system**, **E-PLAN objectives** and the **exclusive X-LED³** for great-looking, rich and high-quality specimen view.



The extremely powerful **LED fluorescence** illuminator ensures **unparalleled convenience** as it eliminates the warm-up/cool-down times and all the inconveniences related lamp replacement and adjustment, ensuring over 50.000 hours of use and reduced power consumptions. The **blue and green excitation filter sets** combined with allow the visualization of several fluorochromes, such as Auramine, FITC, GFP and YFP (with blue filter set) plus Rhodamine, Texas Red and TRITC (with the green one).

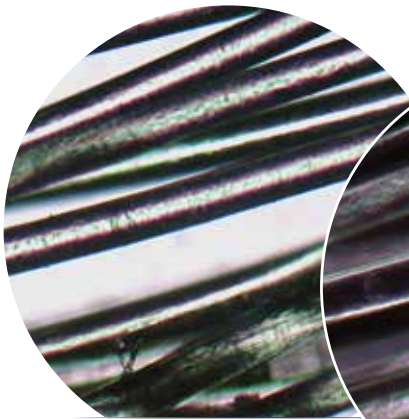
Part	Description
Illumination	Transmitted light: Light source type X-LED ³ with manual brightness control.
	Epi-fluorescence: High-power white LED with manual brightness control.
Observation modes	Brightfield, Blue and Green Fluorescence
Objective	- IOS E-PLAN objective 4x/0.10, W.D. 16.8 mm
	- IOS E-PLAN objective 10x/0.25, W.D. 5.8 mm
Objective	- IOS E-PLAN objective 20x/0.40, W.D. 1.4 mm
	- IOS E-PLAN objective 40x/0.65, W.D. 0.43 mm
	- IOS E-PLAN objective 100x/1.25, W.D. 0.13 mm
All objectives are treated with an anti-fungus treatment.	
Filter Set	2-position fluorescence filter holder (blue & green).

Standard filterset

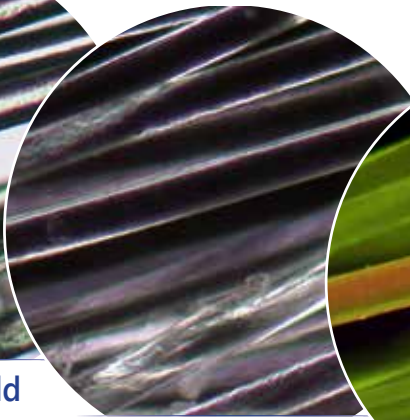
Name	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
B (Blue)	460 – 490	505	515LP
G (Green)	510 – 550	570	590LP

B-383FL - Fluorescence microscope

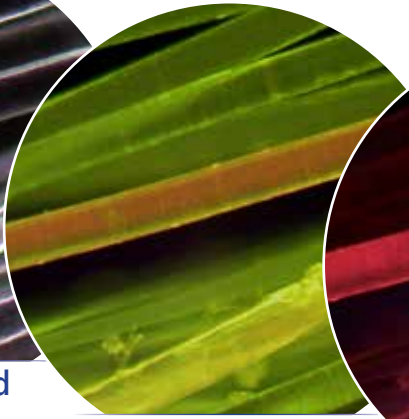
Laboratory biological microscope for **brightfield** and **fluorescence** observations with **infinity corrected optical system**, **E-PLAN objectives** and the **exclusive X-LED³** for great-looking, rich and high-quality specimen view.



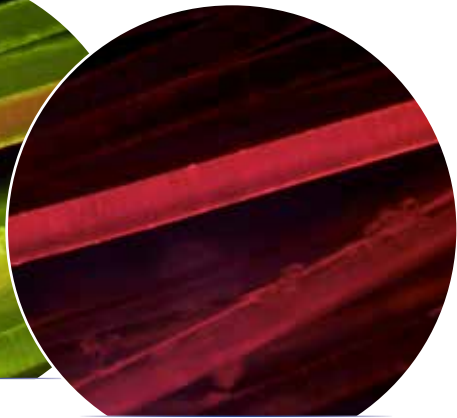
10x - Brightfield



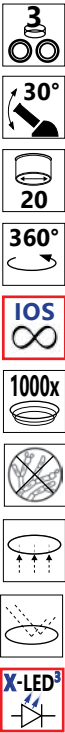
10x - Darkfield
with M-185



10x - Blue
Excitation



10x - Green
Excitation



The **HBO fluorescence** illuminator provides an outstanding flexibility of use, standing the blue and green filter sets (supplied as standard) for Auramine, FITC, GFP and YFP (with blue filter set) plus Rhodamine, Texas Red and TRITC (with the green one), but giving the possibility to combine any other specific filter sets for future upgrade.

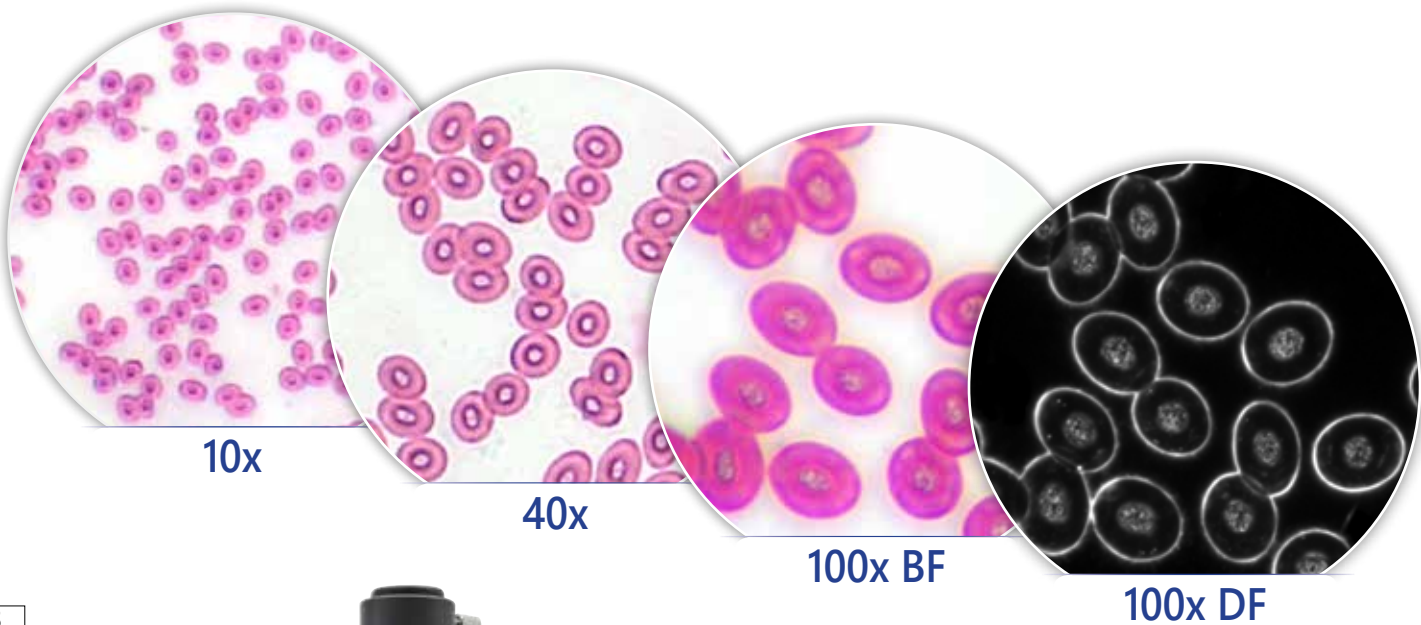
Part	Description
Illumination	Transmitted light: Light source type X-LED ³ with manual brightness control.
	Epi-fluorescence: HBO 100W high pressure mercury bulb with manual brightness control.
Observation modes	Brightfield and Fluorescence.
Objectives	- IOS E-PLAN objective 4x/0,10, W.D. 16.8 mm
	- IOS E-PLAN objective 10x/0,25, W.D. 5.8 mm
Objectives	- IOS E-PLAN objective 20x/0,40, W.D. 1.4 mm
	- IOS E-PLAN objective 40x/0,65, W.D. 0.43 mm
	- IOS E-PLAN objective 100x/1,25 (Oil), W.D. 0.13 mm (oil immersion)
	All objectives are treated with an anti-fungus treatment.
Filter Set	2-position fluorescence filter holder (blue & green).

Standard filterset

Name	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
B (Blue)	460 - 490	505	515LP
G (Green)	510 - 550	570	590LP

B-383DK - Darkfield microscope

Laboratory biological microscope for **brightfield** and **darkfield** observations with **E-PLAN objectives** (and PLAN 100x with iris) for biology and especially darkfield fresh blood analysis and the **exclusive X-LED³ illumination system**.



The special condenser with integrated, **exclusive X-LED³ illuminator** replaces any other external and expensive lighting source required for these applications and is ideal for great-looking, rich and high-quality specimen view. Our immersion darkfield system provides the same result achieved by 150W external illuminators in combination with traditional cardioid darkfield condenser.

Part	Description
Objectives	<ul style="list-style-type: none">- E-PLAN objective 4x/0.10, W.D. 15.2 mm- E-PLAN objective 10x/0.25, W.D. 5.5 mm- E-PLAN objective 40x/0.65, W.D. 0.45 mm- PLAN objective 100x/1.25OI (oil iris), W.D. 0.1 mm (oil immersion) All objectives are treated with an anti-fungus treatment.
Observation modes	Brightfield and darkfield.
Condenser	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable. Darkfield N.A. 1.36 with built-in X-LED ³ .

B-380 Series - Optical performance

Optical performance B-382PL-ALC, B-383PL and B-383DK

Eyepiece			10x		15x		20x	
Field number (mm)			20		16		10	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
4x (E-PLAN 160 mm)	0.1	15.2	40x	5	60x	4	80x	2.5
10x (E-PLAN 160 mm)	0.25	5.5	100x	2	150x	1.6	200x	1
20x (E-PLAN 160 mm)	0.4	5	200x	1	300x	0.8	400x	0.5
40x (E-PLAN 160 mm)	0.65	0.45	400x	0.5	300x	0.4	800x	0.25
60x (E-PLAN 160 mm)	0.8	0.13	600x	0.33	900x	0.26	1200x	0.16
100x (E-PLAN 160 mm)	1.25 (oil)	0.13	1000x	0.2	1500x	0.16	2000x	0.1
100x (PLAN 160 mm)	1.25 (oil-iris)	0.10	1000x	0.2	1500x	0.16	2000x	0.1

Optical performance B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL and B-383POL

Eyepiece			10x		15x		20x	
Field number (mm)			20		16		10	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
4x (E-PLAN IOS)	0.1	16.8	40x	5	60x	4	80x	2.5
10x (E-PLAN IOS)	0.25	5.8	100x	2	150x	1.6	200x	1
20x (E-PLAN IOS)	0.4	1.4	200x	1	300x	0.8	400x	0.5
40x (E-PLAN IOS)	0.65	0.43	400x	0.5	300x	0.4	800x	0.25
60x (E-PLAN IOS)	0.8	0.14	600x	0.33	900x	0.26	1200x	0.16
100x (E-PLAN IOS)	1.25 (oil)	0.13	1000x	0.2	1500x	0.16	2000x	0.1

Optical performance B-383PH and B-382PH-ALC

Eyepiece			10x		15x		20x	
Field number (mm)			20		16		10	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
10xPH (E-PLAN 160 mm)	0.25	12.2	100x	2	150x	1.6	200x	1
40xPH (E-PLAN 160 mm)	0.65	0.37	400x	0.5	300x	0.4	800x	0.25
100xPH (E-PLAN 160 mm)	1.25 (oil)	0.13	1000x	0.2	1500x	0.16	2000x	0.1

Optical performance B-383PHi and B-382PHi-ALC

Eyepiece			10x		15x		20x	
Field number (mm)			20		16		10	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
10xPH (E-PLAN IOS)	0.25	10	100x	2	150x	1.6	200x	1
20xPH (E-PLAN IOS)	0.4	5.1	200x	1	300x	0.8	400x	0.5
40xPH (E-PLAN IOS)	0.65	0.54	400x	0.5	300x	0.4	800x	0.25
100xPH (E-PLAN IOS)	1.25 (oil)	0.13	1000x	0.2	1500x	0.16	2000x	0.1

Optical performance B-383MET

Eyepiece			10x		15x		20x	
Field number (mm)			20		16		10	
Objective	N.A.	W.D (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)	Total magnification	Field of View (mm)
4x MET (PLAN IOS)	0.10 (no cover)	17.3	40x	5	60x	4	40x	2.5
10x MET (PLAN IOS)	0.25 (no cover)	10	100x	2	150x	1.6	200x	1
20x MET (PLAN IOS)	0.40 (no cover)	5.8	200x	1	300x	0.8	400x	0.5
50x MET (PLAN IOS)	0.75 (no cover)	0.32	500x	0.4	750x	0.32	1000x	0.2

B-380 Series - Comparison chart

Model	Head	Eyepiece	Objectives	Nosepiece	Stage	Focusing	Condenser	Illuminator
B-382PL-ALC	Binocular 30° inclined	Wide Field 10X/20 mm	E-PLAN 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140mm, moving range 78x54mm	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	X-LED ³ , with Automatic Light Control
B-383PL	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	E-PLAN 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140mm, moving range 78x54mm	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	X-LED ³ , with manual brightness control
B-382PLi-ALC	Binocular 30° inclined	Wide Field 10X/20 mm	IOS E-PLAN 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	X-LED ³ , with Automatic Light Control
B-383PLi	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS E-PLAN 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	X-LED ³ , with manual brightness control
B-382PH-ALC	Binocular 30° inclined	Wide Field 10X/20 mm	PLAN 4x, 10xPh, 40xPh, 100xPh (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140mm, moving range 78x54mm	Coaxial coarse and fine focusing with limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	X-LED ³ , with Automatic Light Control
B-383PH	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	PLAN 4x, 10xPh, 40xPh, 100xPh (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140mm, moving range 78x54mm	Coaxial coarse and fine focusing with limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	X-LED ³ , with manual brightness control
B-382PHi-ALC	Binocular 30° inclined	Wide Field 10X/20 mm	IOS PLAN 10xPh, 20xPh, 40xPh, 100xPh (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	X-LED ³ , with Automatic Light Control
B-383PHi	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS PLAN 10xPh, 20xPh, 40xPh, 100xPh (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	X-LED ³ , with manual brightness control
B-383POL	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm crosshair reticle	IOS E-PLAN POL 4x, 10x, 40x, 60x.	Quadruple nosepiece, reversed	160mm dia.; 360° rotating with stop knob and 0.1° Vernier.	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable. With rotating polarizer filter.	X-LED ³ , with manual brightness control
B-383MET	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS PLAN MET 4x, 10x, 20x, 50x.	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, dimensions 188x150mm, moving range 78x54mm. Rackless in X direction.	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	Transmitted and incident: X-LED ³ , with manual brightness control
B-383LD1	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS E-PLAN 4x, 10x, 20x, 40x, 100x (Oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	Transmitted light: X-LED ³ Epi-fluorescence: high-power blue LED
B-383LD2	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS E-PLAN 4x, 10x, 20x, 40x, 100x (Oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	Transmitted light: X-LED ³ Epi-fluorescence: high-power white LED
B-383FL	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	IOS E-PLAN 4x, 10x, 20x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 188x150mm, moving range 78x54mm, Rackless in X direction	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable.	Transmitted light: X-LED ³ Epi-fluorescence: HBO 100W high pressure mercury bulb
B-383DK	Trinocular, 30° inclined, 360°rotating	Wide Field 10X/20 mm	E-PLAN 4x, 10x, 40x PLAN 100x (oil, with iris diaphragm)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140mm, moving range 78x54mm	Coaxial coarse and fine focusing with limit stop	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable. Darkfield N.A. 1.36 with built-in X-LED ³ .	X-LED ³ , with manual brightness control

B-380 Series - Accessories

ACCESSORIES FOR B-380

M-160	Eyepiece WF10x/20mm.
M-161	Eyepiece EW15x/16mm.
M-162	Eyepiece WF20x/10mm.
M-163	Micrometer eyepiece WF10x/20mm, 10mm/100um.
M-008.1	Eyepiece with pointer WF10x/20mm.
M-164	E-PLAN objective 4x/0.10 (only for B-382PL-ALC, B-383PL, B-383DK).
M-165	E-PLAN objective 10x/0.25 (only for B-382PL-ALC, B-383PL, B-383DK).
M-166	E-PLAN objective 20x/0.40 (only for B-382PL-ALC, B-383PL, B-383DK).
M-167	E-PLAN objective 40x/0.65 (only for B-382PL-ALC, B-383PL, B-383DK).
M-168	E-PLAN objective 60x/0.80 (only for B-382PL-ALC, B-383PL, B-383DK).
M-169	E-PLAN objective 100x/1.25 (Oil) (only for B-382PL-ALC, B-383PL).
M-144	IOS E-PLAN objective 4x/0.10 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-145	IOS E-PLAN objective 10x/0.25 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-146	IOS E-PLAN objective 20x/0.40 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-147	IOS E-PLAN objective 40x/0.65 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-149	IOS E-PLAN objective 60x/0.80 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-148	IOS E-PLAN objective 100x/1.25 (Oil) (Oil) (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
M-059	PLAN objective 100x/1.25OI (oil iris) (only for B-383DK).
M-170	PLAN PH objective 10x/0.25 (only for B-383PH, B-382PH-ALC).
M-171	PLAN PH objective 20x/0.40 (only for B-383PH, B-382PH-ALC).
M-172	PLAN PH objective 40x/0.65 (only for B-383PH, B-382PH-ALC).
M-182	PLAN PH objective 100x/1.25 (Oil) (only for B-383PH, B-382PH-ALC).
M-183	IOS PLAN PH objective 10x/0.25 (only for B-383PHi, B-382PHi-ALC).
M-176	IOS PLAN PH objective 20x/0.40 (only for B-383PHi, B-382PHi-ALC).
M-177	IOS PLAN PH objective 40x/0.65 (only for B-383PHi, B-382PHi-ALC).
M-178	IOS PLAN PH objective 100x/1.25 (Oil) (only for B-383PHi, B-382PHi-ALC).
M-144P	IOS E-PLAN POL objective 4x/0.10 (only for B-383POL).
M-145P	IOS E-PLAN POL objective 10x/0.25 (only for B-383POL).
M-146P	IOS E-PLAN POL objective 20x/0.40 (only for B-383POL).
M-147P	IOS E-PLAN POL objective 40x/0.65 (only for B-383POL).
M-149P	IOS E-PLAN POL objective 60x/0.80 (only for B-383POL).
M-148P	IOS E-PLAN POL objective 100x/1.25 (Oil) (only for B-383POL).
M-335	IOS PLAN MET objective 50x/0.75 (only for B-383LD1, B-383LD2, B-383FL, B-383MET).
M-337	IOS PLAN MET objective 4x/0.10 (only for B-383MET).
M-338	IOS PLAN MET objective 10x/0.25 (only for B-383MET).
M-339	IOS PLAN MET objective 20x/0.40 (only for B-383MET).
M-179	Complete PH Set – PLAN PH obj. 10x, 40x, 100x - Condenser for BF/DF/PH (only for B-383PL, B-382PL-ALC, B-383DK).
M-181	Complete PH Set – IOS PLAN PH obj. 10x, 20x, 40x, 100x – Condenser for BF/DF/PH (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL, B-383MET).
M-151	HBO100W high-pressure mercury bulb for fluorescence (for B-383FL only).
M-666.380	Heating stage, with digital temperature controller.
M-174.1	Polarizing set, filters only (for B-380 series).
M-175	Rotating table for polarizing set.
M-185	DF condenser for dry objectives.
M-975.1	Ring with blue filter, 45mm diameter.
M-977.1	Ring with green filter, 45mm diameter.
M-979.1	Ring with yellow filter, 45mm diameter.
M-989.1	Ring with frosted glass filter, 45mm diameter.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
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-005	Micrometer slide for software calibration, 1mm/10um, 10mm/100um.
DC-003	TNT dust cover, medium – 600(l)x550(h)mm.
15008	OPTIKA immersion oil 10ml.
15104	Cleaning kit.
VP-380	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).



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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