

**OPTIKA<sup>®</sup>**  
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 20 mm field number
- » True infinity optical system available (IOS)
- » Fully centerable condenser for precise light control

## LABORATORY GRADE OPTICS

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





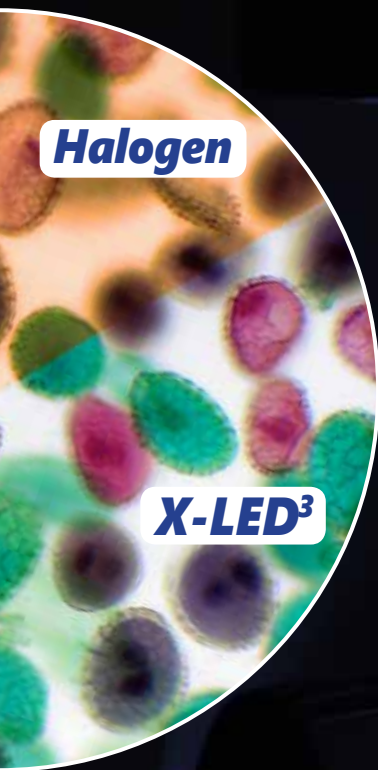
# **X-LED<sup>3</sup>** - Two Times Brighter Than Any Other

## **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 (6,300 K)

## **CUT ELECTRICITY BILLS BY 90%**

- » Money & energy saving
- » Low power consumption, only 3.6 W
- » LED long lifetime (65,000 hours = 25 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



Trinocular



Inclined head



Field number



Eyepiece with pointer



Rotating head 360°



Infinity-corrected optics



Max. magnification



Anti-fungus treatment



Incident light



Transmitted light



Polarized light



X-LED illuminator



Automatic light control



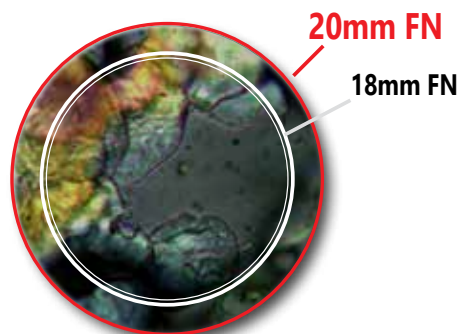
# B-380 Series

## 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-LED<sup>3</sup> Exclusive Lighting Source

Achieve bright images, improved colour fidelity, pure white colour temperature, incredibly low energy consumptions and longer lifespan with the unique X-LED<sup>3</sup> 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 (20 mm Field Number)

Enjoy a 20 mm 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**.

## Condenser Suitable For Darkfield

OPTIKA B-380 phase contrast microscopes are equipped with a 5-position dedicated rotating condenser for brightfield (standard use), phase contrast (10x/20x, 40x and 100x phase diaphragms), and a darkfield position for dry objectives.





# 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.



## Exclusive X-LED<sup>3</sup> Darkfield Condenser

The special condenser with integrated, exclusive X-LED<sup>3</sup> 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.



## 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





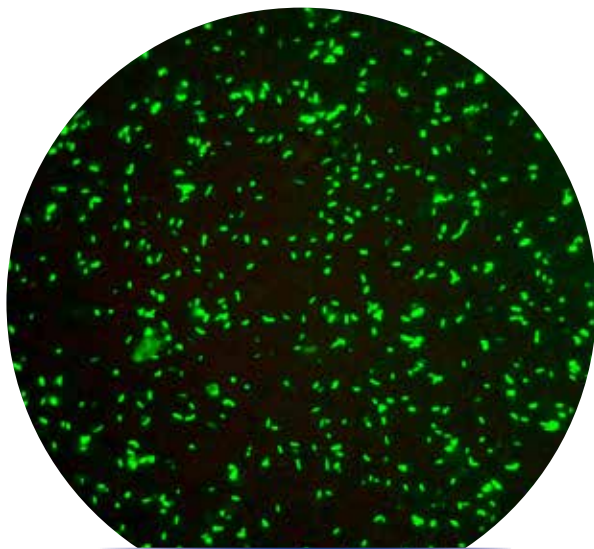
## B-380 Series



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 W-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 W-PLAN PH 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 W-PLAN PH objectives and M-181 with IOS W-PLAN PH 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.



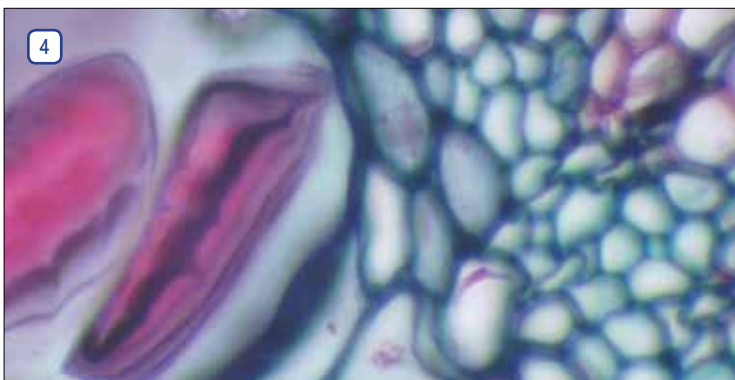
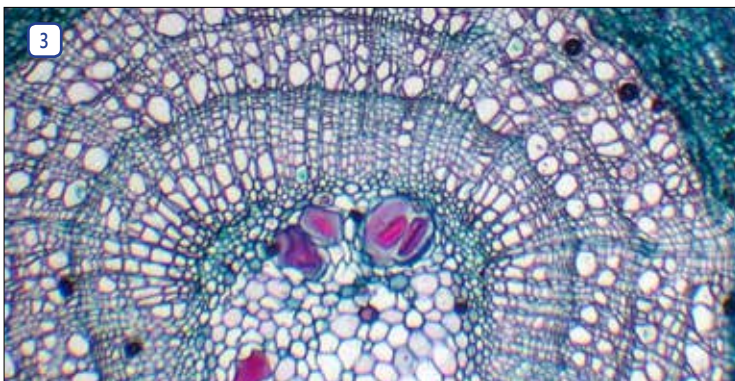
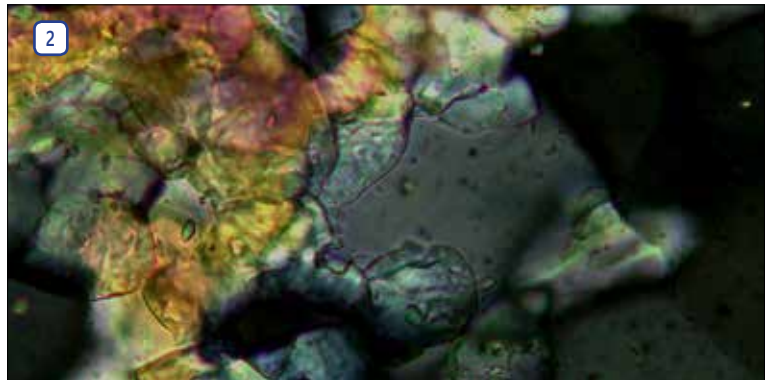
# B-380 Series

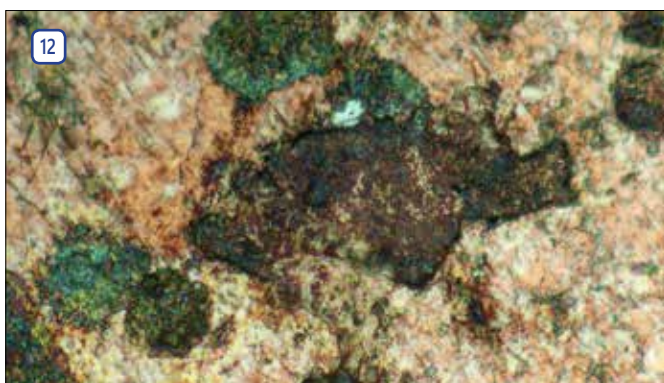
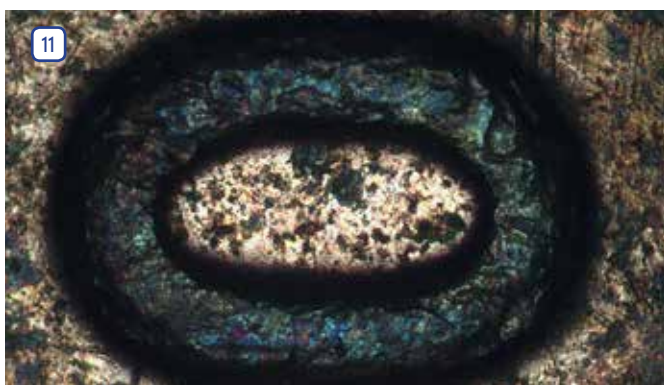
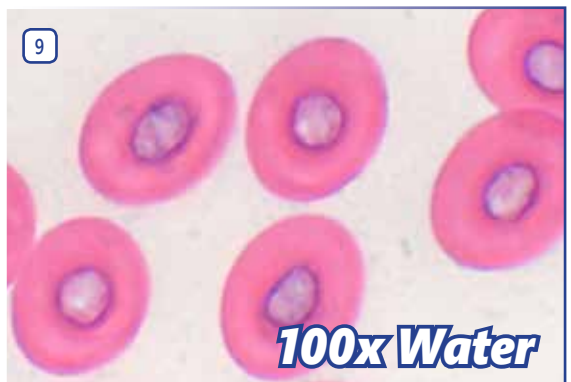
## Applications

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. Frog Blood Smear, with B-382PLi-ALC and 100x objective.
9. Frog Blood Smear, with B-382PLi-ALC and 100x objective with water.
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**

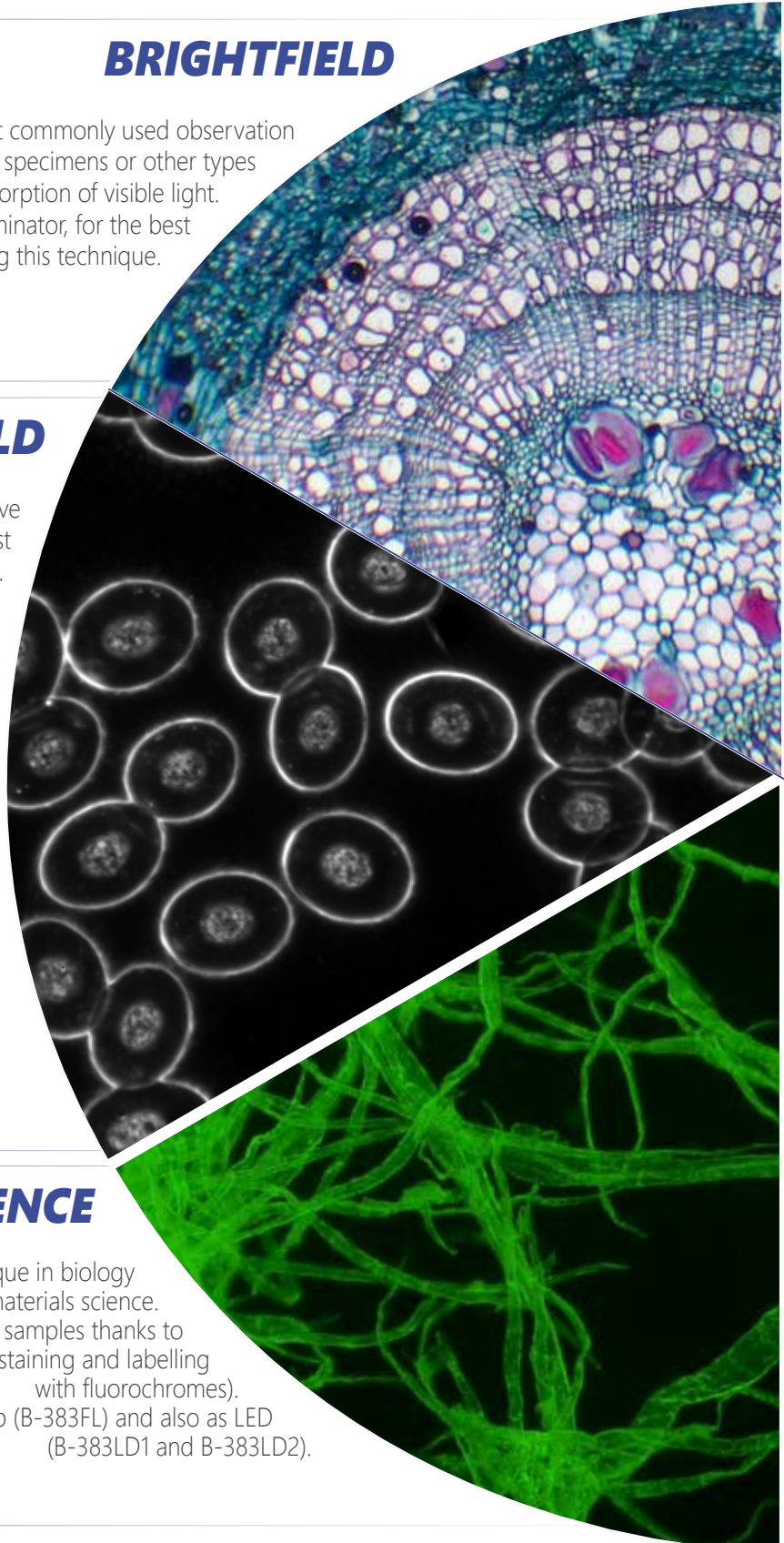
Transmitted brightfield illumination is one of the most commonly used observation method in optical microscopy, and is ideal for fixed, stained specimens or other types of samples having high natural absorption of visible light. B-380 Series is fitted with high-efficiency LED brightfield illuminator,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







## **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:

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

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

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

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

**IOS W-PLAN MET:** B-383MET.

**IOS N-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, 160x140 mm, 78x54 mm 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, 233x147 mm, 78x54 mm X-Y rackless movement.

**B-383POL:** 160 mm 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-LED<sup>3</sup>.

### B-383POL:

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

With rotating polarizer filter.

## Illumination:

All models: X-LED<sup>3</sup>.

ALC models: X-LED<sup>3</sup> with automatic light control.

# B-380 Series - Range

## B-382PL-ALC



Automatic Light Control



Brightfield binocular microscope with **N-PLAN objectives**, moving stage and combining the **exclusive X-LED<sup>3</sup>** with **ALC** for great-looking, rich and high-quality specimen view.

## B-383PL



X-LED<sup>3</sup>



Brightfield trinocular microscope with **N-PLAN objectives**, moving stage and the **exclusive X-LED<sup>3</sup>** for incredibly bright illumination.

## B-382PLi-ALC



Automatic Light Control



Brightfield binocular microscope with **IOS N-PLAN (infinity corrected) objectives**, **rackless moving stage** and combining the **exclusive X-LED<sup>3</sup>** with **ALC** for great-looking, rich and high-quality specimen view.

## B-383PLi



X-LED<sup>3</sup>



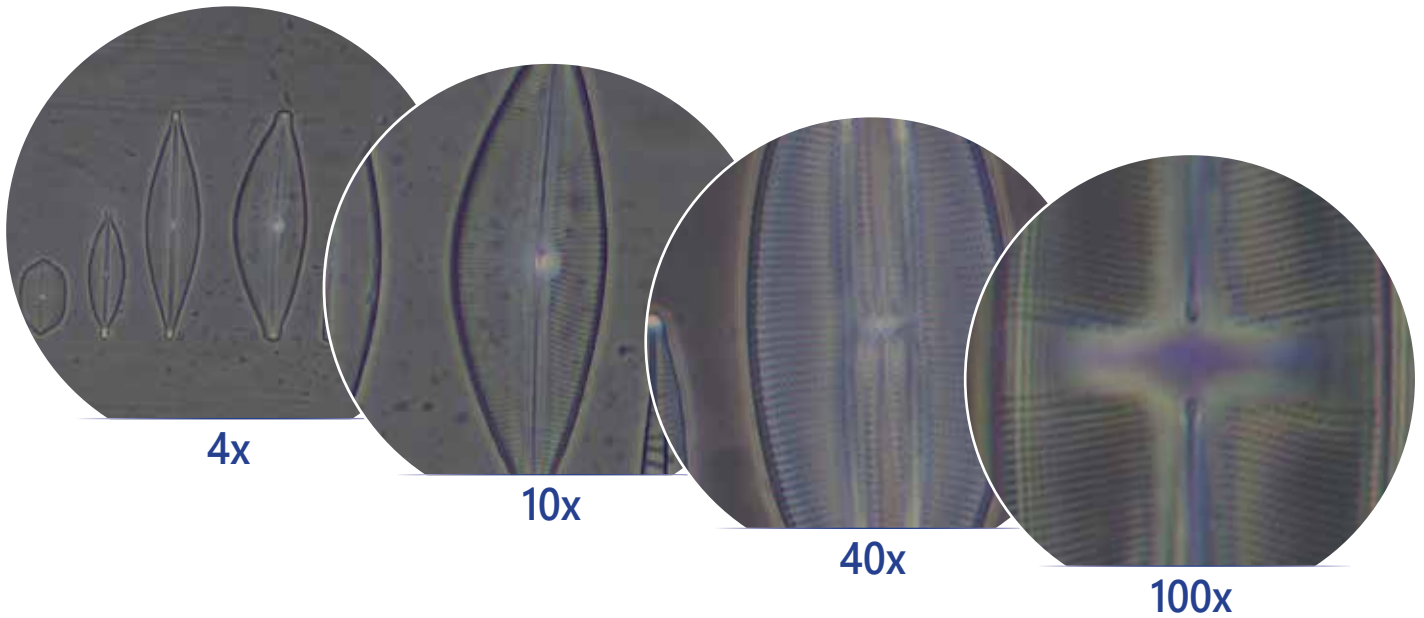
Brightfield trinocular microscope with **IOS N-PLAN (infinity corrected) objectives**, **rackless moving stage** and the **exclusive X-LED<sup>3</sup>** for incredibly bright illumination.



# 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



Phase contrast and brightfield binocular microscope with W-PLAN PH objectives, moving stage and combining the exclusive X-LED<sup>3</sup> with ALC for great-looking, rich and high-quality specimen view.

## B-383PH



Phase contrast and brightfield trinocular microscope with W-PLAN PH objectives, moving stage and the exclusive X-LED<sup>3</sup> for incredibly bright illumination.

# B-380 Series - Range

## B-382PHi-ALC



Automatic Light Control



## B-383PHi



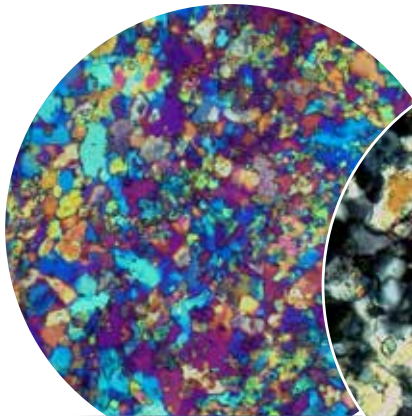
Phase contrast and brightfield binocular microscope with IOS W-PLAN PH objectives, rackless moving stage and combining the exclusive X-LED<sup>3</sup> with ALC for great-looking, rich and high-quality specimen view.

Phase contrast and brightfield trinocular microscope with IOS W-PLAN PH objectives, rackless moving stage and the exclusive X-LED<sup>3</sup> for incredibly bright illumination.

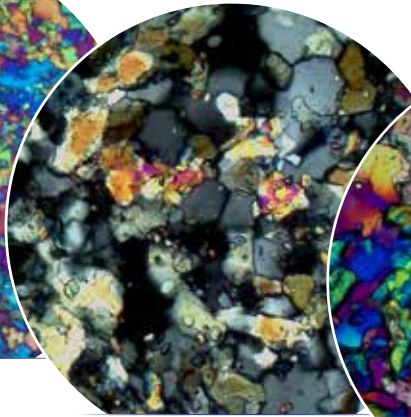


# B-383POL - Polarized microscope

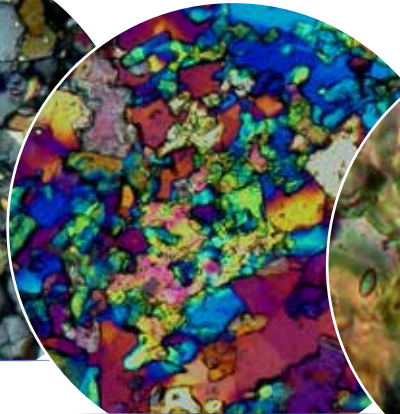
Biological microscope for **brightfield** and **polarizing light** observations with strain-free **IOS N-PLAN POL objectives**. A complete system for your analysis, complete of polarizer and analyzer filters, Bertrand lens for conoscopic observation, compensator plates and high-precision rotatable stages. It comes with the exclusive X-LED<sup>3</sup> illumination system to deliver bright and clear images, along with all the accessories to perform accurate polarization analysis in biology and materials science.



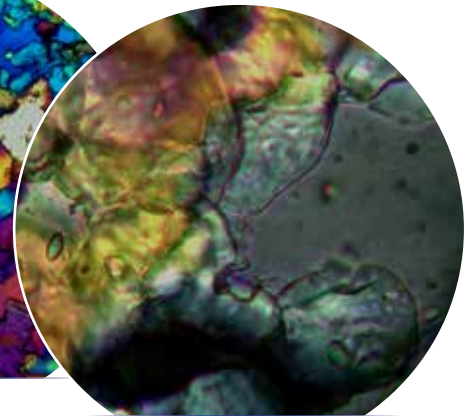
**4x**  
with First Order plate



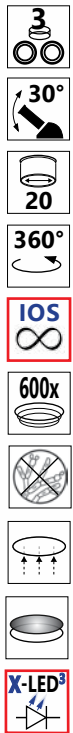
**10x**



**10x**  
with First Order plate



**60x**

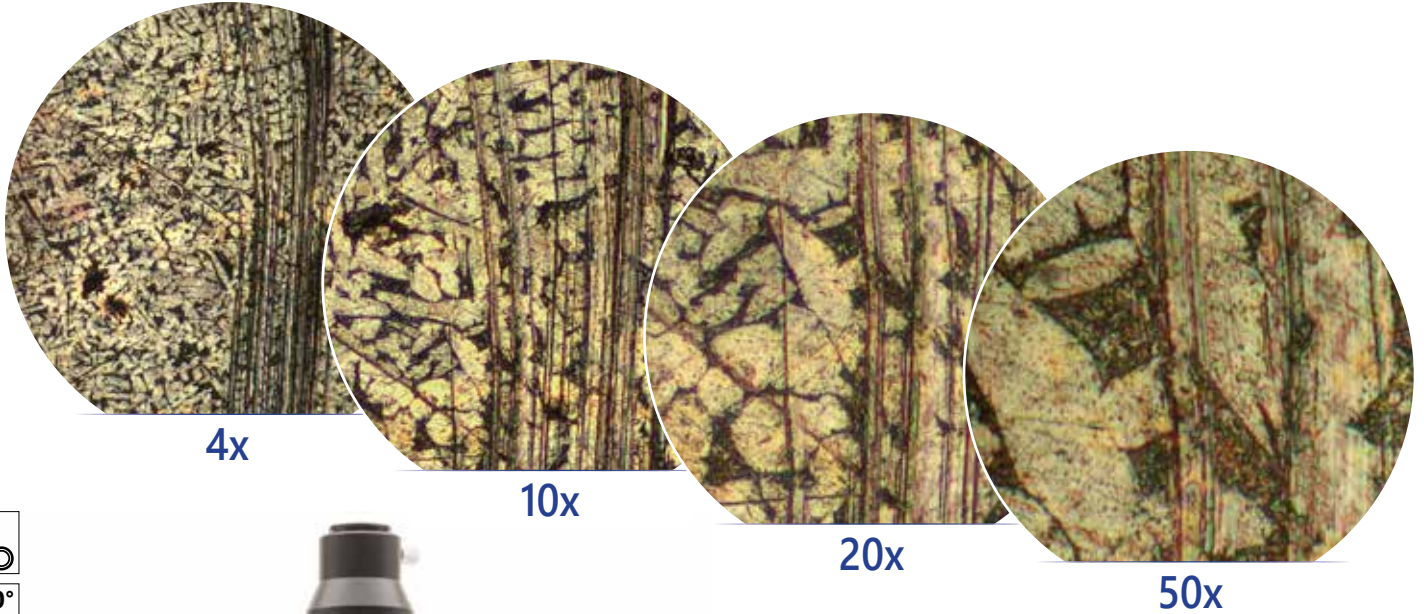


Part	Description
<b>Polarizing attachment</b>	0°-90° rotating analyzer filter. Tint plates included: 1 <sup>st</sup> order red ( $\lambda$ ), $\lambda/4$ , quartz wedge.
<b>Bertrand lens</b>	Swing-out type; centerable.
<b>Stage</b>	160 mm dia.; 360° rotating with stop knob and 0.1° Vernier scale.
<b>Nosepiece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



# B-383MET - Metallographic microscope

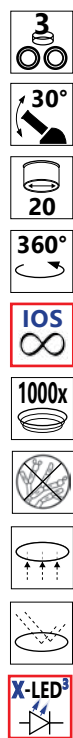
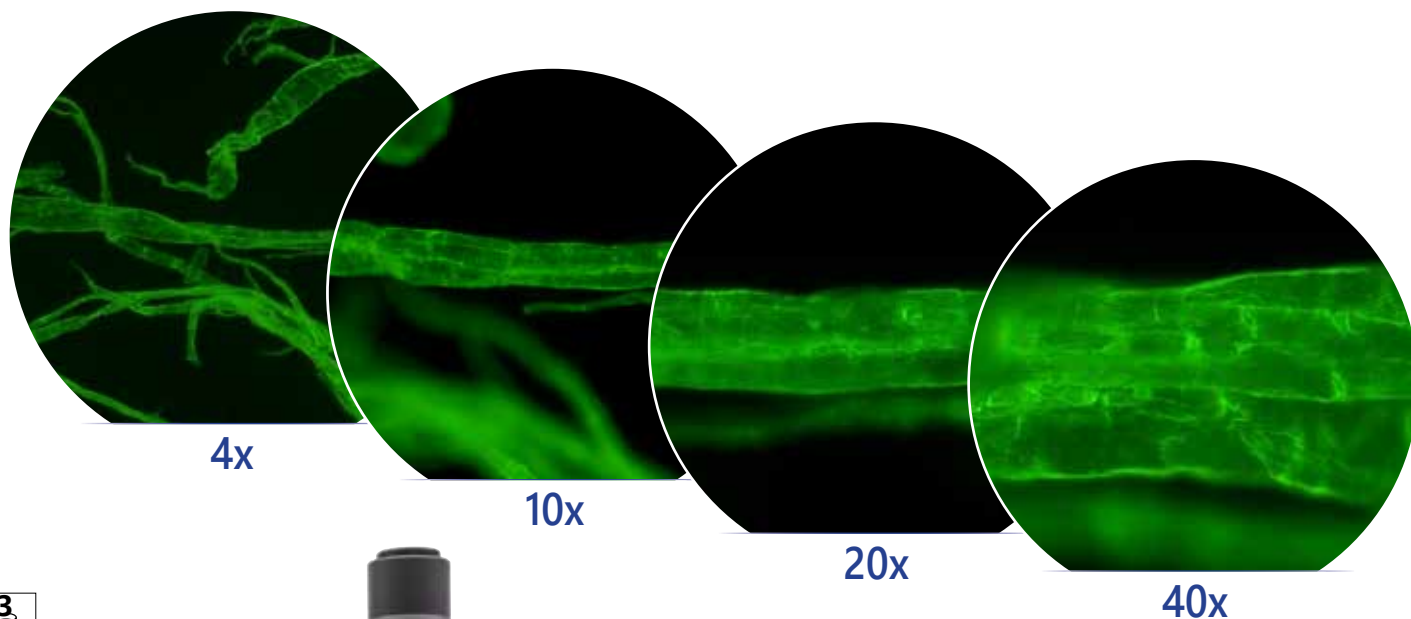
Brightfield biological microscope with **IOS W-PLAN MET objectives** and **metallurgical attachment** combining the **exclusive X-LED<sup>3</sup>** lighting source both for incident and transmitted illumination. The NCG (no cover glass) objectives are especially designed for microscopy use **without a cover slip** ideal for metallographic samples and other opaque specimens.



Part	Description
Illumination	<b>Transmitted and incident light:</b> Light source type X-LED <sup>3</sup> with manual brightness control.
Incident light filters	Polarizer & analyzer filters.
Objectives	<ul style="list-style-type: none"> <li>- IOS W-PLAN MET 4x/0.10, W.D. 17.3 mm</li> <li>- IOS W-PLAN MET 10x/0.25, W.D. 10 mm</li> <li>- IOS W-PLAN MET 20x/0.40, W.D. 5.8 mm</li> <li>- IOS W-PLAN MET 50x/0.75, W.D. 0.32 mm</li> </ul> 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 **IOS N-PLAN objectives** and the **exclusive X-LED<sup>3</sup>** 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 65,000 hours of use and reduced power consumptions.

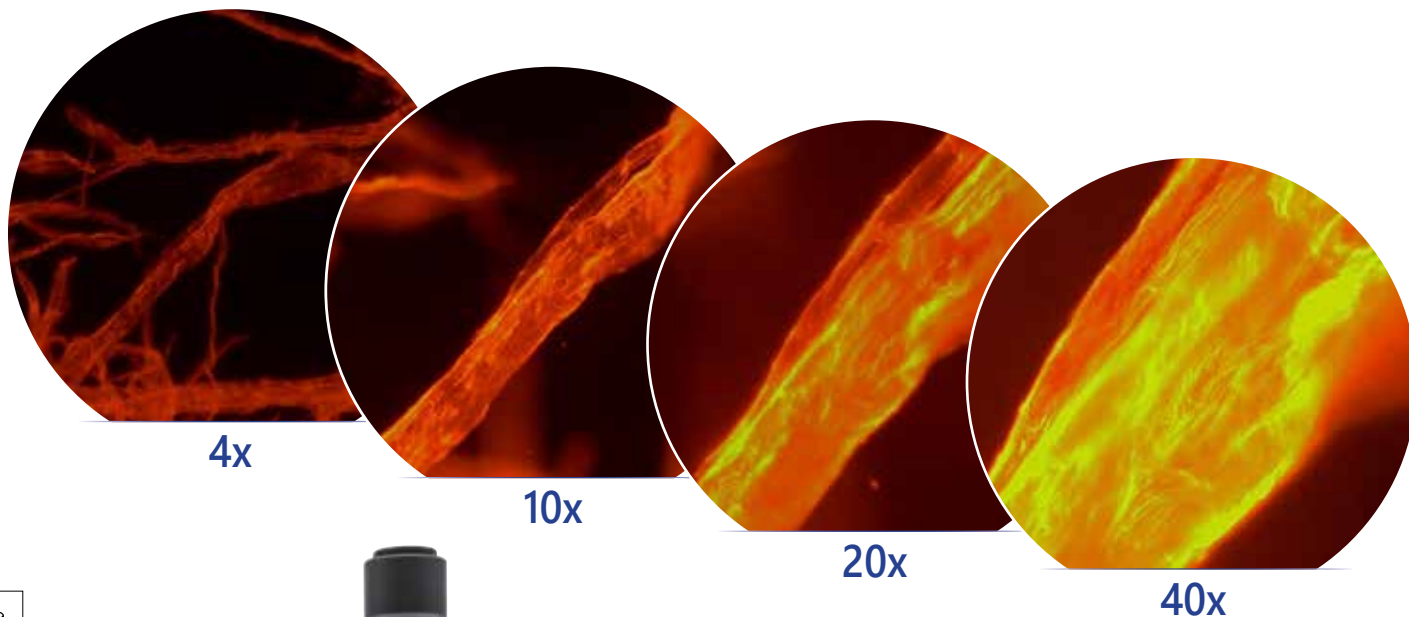
Part	Description
<b>Illumination</b>	<b>Transmitted light:</b> Light source type X-LED <sup>3</sup> with manual brightness control. <b>Epi-fluorescence:</b> High-power <b>blue</b> LED with manual brightness control.
<b>Observation modes</b>	Brightfield, Blue Fluorescence.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- IOS N-PLAN 4x/0.10, W.D. 16.8 mm</li> <li>- IOS N-PLAN 10x/0.25, W.D. 5.8 mm</li> <li>- IOS N-PLAN 20x/0.40, W.D. 1.4 mm</li> <li>- IOS N-PLAN 40x/0.65, W.D. 0.43 mm</li> <li>- IOS N-PLAN 100x/1.25, W.D. 0.13 mm (OIL/WATER immersion)</li> </ul> All objectives are treated with an anti-fungus treatment.
<b>Filter Set</b>	Single position fluorescence filter holder (blue).

## Standard filterset

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

# B-383LD2 - LED Fluorescence microscope

Laboratory biological microscope for **brightfield** and **fluorescence** observations with **IOS N-PLAN objectives** and the **exclusive X-LED<sup>3</sup>** 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 65,000 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
<b>Illumination</b>	<b>Transmitted light:</b> Light source type X-LED <sup>3</sup> with manual brightness control. <b>Epi-fluorescence:</b> High-power <b>white</b> LED with manual brightness control.
<b>Observation modes</b>	Brightfield, Blue and Green Fluorescence
<b>Objectives</b>	- IOS N-PLAN 4x/0.10, W.D. 16.8 mm - IOS N-PLAN 10x/0.25, W.D. 5.8 mm - IOS N-PLAN 20x/0.40, W.D. 1.4 mm - IOS N-PLAN 40x/0.65, W.D. 0.43 mm - IOS N-PLAN 100x/1.25, W.D. 0.13 mm (OIL/WATER immersion) All objectives are treated with an anti-fungus treatment.
<b>Filter Set</b>	2-position fluorescence filter holder (blue & green).

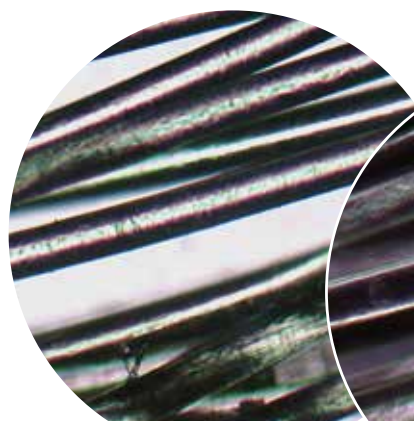
## Standard filterset

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

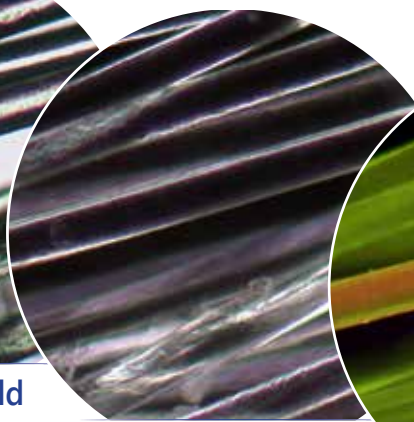


# B-383FL - Fluorescence microscope

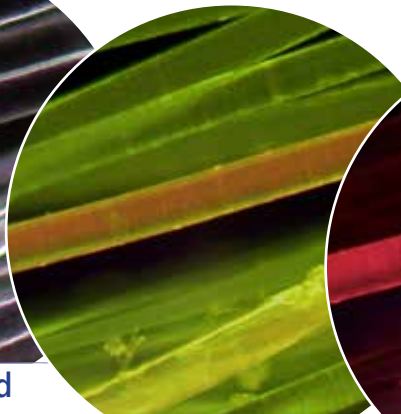
Laboratory biological microscope for **brightfield** and **fluorescence** observations with **IOS N-PLAN objectives** and the **exclusive X-LED<sup>3</sup>** for great-looking, rich and high-quality specimen view.



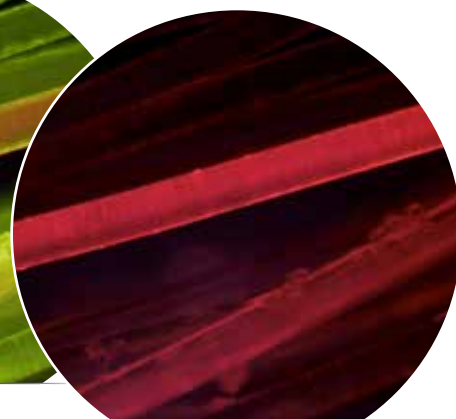
10x - Brightfield



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.

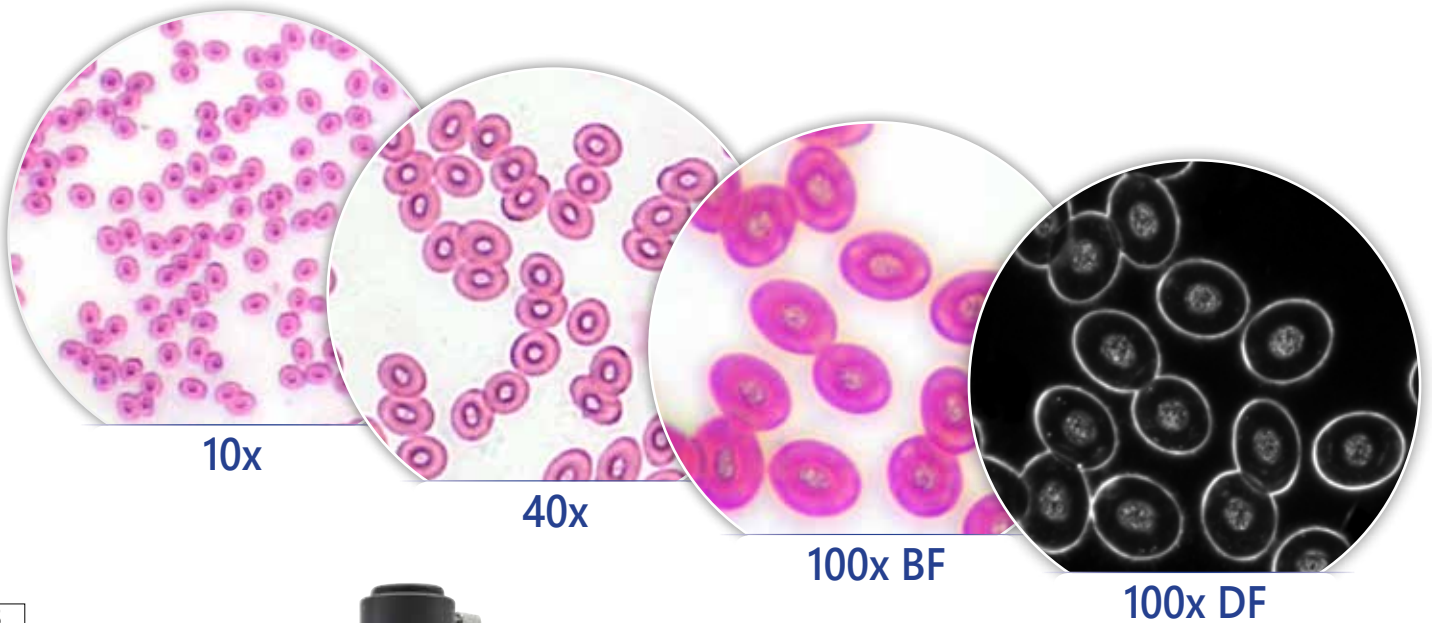
Part	Description
<b>Illumination</b>	<b>Transmitted light:</b> Light source type X-LED <sup>3</sup> with manual brightness control. <b>Epi-fluorescence:</b> HBO 100W high pressure mercury bulb with manual brightness control.
<b>Observation modes</b>	Brightfield and Fluorescence.
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- IOS N-PLAN 4x/0.10, W.D. 16.8 mm</li> <li>- IOS N-PLAN 10x/0.25, W.D. 5.8 mm</li> <li>- IOS N-PLAN 20x/0.40, W.D. 1.4 mm</li> <li>- IOS N-PLAN 40x/0.65, W.D. 0.43 mm</li> <li>- IOS N-PLAN 100x/1.25, W.D. 0.13 mm (OIL/WATER immersion)</li> </ul> All objectives are treated with an anti-fungus treatment.
<b>Filter Set</b>	2-position fluorescence filter holder (blue & green).

## Standard filterset

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

# B-383DK - Darkfield microscope

Laboratory biological microscope for **brightfield** and **darkfield** observations with **N-PLAN objectives** (and W-PLAN 100x with iris) for biology and especially darkfield fresh blood analysis and the **exclusive X-LED<sup>3</sup> illumination system**.



The special condenser with integrated, **exclusive X-LED<sup>3</sup> 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
<b>Objectives</b>	<ul style="list-style-type: none"> <li>- N-PLAN 4x/0.10, W.D. 15.2 mm</li> <li>- N-PLAN 10x/0.25, W.D. 5.5 mm</li> <li>- N-PLAN 40x/0.65, W.D. 0.45 mm</li> <li>- W-PLAN 100x/0.36-1.25, W.D. 0.1 mm, with iris (oil immersion)</li> </ul> All objectives are treated with an anti-fungus treatment.
<b>Observation modes</b>	Brightfield and darkfield.
<b>Condenser</b>	Abbe N.A. 1.25, with iris diaphragm, focusable and centerable. Darkfield N.A. 1.36 with built-in X-LED <sup>3</sup> .

# B-380 Series - Comparison chart

Model	Head	Eyepiece	Nosepiece	Objectives	Stage	Focusing	Condenser	Illuminator
<b>B-382PL-ALC</b>	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W X-LED <sup>3</sup> , ALC control
<b>B-383PL</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-382PLi-ALC</b>	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W X-LED <sup>3</sup> , ALC control
<b>B-383PLi</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-382PH-ALC</b>	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	W-PLAN 4x, 10xPH, 40xPH, 100xPH (oil)	Double layer, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED <sup>3</sup> , ALC control
<b>B-383PH</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	W-PLAN 4x, 10xPH, 40xPH, 100xPH (oil)	Double layer, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-382PHi-ALC</b>	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	IOS W-PLAN 10xPH, 20xPH, 40xPH, 100xPH (oil)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED <sup>3</sup> , ALC control
<b>B-383PHi</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS W-PLAN 10xPH, 20xPH, 40xPH, 100xPH (oil)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-383POL</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20 (one with crosshair reticle)	Quadruple, reversed	IOS N-PLAN POL 4x, 10x, 40x, 60x	Round, 360° rotating, 160 mm diameter, with sample clips and stop knob	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale. With rotating polarizer	3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-383MET</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS W-PLAN MET 4x, 10x, 20x, 50x	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	<b>Transmitted and incident:</b> 3.6 W X-LED <sup>3</sup> , manual brightness control
<b>B-383LD1</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 20x, 40x, 100x (oil/water)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	<b>Transmitted:</b> 3.6W X-LED <sup>3</sup> , manual brightness control <b>Incident:</b> High-power blue LED
<b>B-383LD2</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 20x, 40x, 100x (oil/water)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	<b>Transmitted:</b> 3.6W X-LED <sup>3</sup> , manual brightness control <b>Incident:</b> High-power white LED
<b>B-383FL</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 20x, 40x, 100x (oil/water)	Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	<b>Transmitted:</b> 3.6W X-LED <sup>3</sup> , manual brightness control <b>Incident:</b> HBO 100 W high-pressure mercury bulb
<b>B-383DK</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, W-PLAN 100x (oil, with iris diaphragm)	Double layer, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale. Darkfield N.A. 1.36 with built-in X-LED <sup>3</sup>	3.6 W X-LED <sup>3</sup> , manual brightness control



# B-380 Series - Accessories

## ACCESSORIES FOR B-380

- M-160 Eyepiece Wide Field, WF 10x/20, High Eyepoint.
- M-161 Eyepiece Wide Field, EW 15x/16.
- M-162 Eyepiece Wide Field, WF 20x/10.
- M-163 Micrometer eyepiece WF 10x/20, 10mm/100um.
- M-008.1 Eyepiece with pointer WF 10x/20.
- M-164 N-PLAN objective 4x/0.10 (only for B-382PL-ALC, B-383PL, B-383DK).
- M-165 N-PLAN objective 10x/0.25 (only for B-382PL-ALC, B-383PL, B-383DK).
- M-166 N-PLAN objective 20x/0.40 (only for B-382PL-ALC, B-383PL, B-383DK).
- M-167 N-PLAN objective 40x/0.65 (only for B-382PL-ALC, B-383PL, B-383DK).
- M-168 N-PLAN objective 60x/0.80 (only for B-382PL-ALC, B-383PL, B-383DK).
- M-169 N-PLAN objective 100x/1.25 (OIL/WATER immersion) (only for B-382PL-ALC, B-383PL).
- M-144 IOS N-PLAN objective 4x/0.10 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-145 IOS N-PLAN objective 10x/0.25 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-146 IOS N-PLAN objective 20x/0.40 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-147 IOS N-PLAN objective 40x/0.65 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-149 IOS N-PLAN objective 60x/0.80 (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-148 IOS N-PLAN objective 100x/1.25 (OIL/WATER immersion) (only for B-382PLi-ALC, B-383PLi, B-383LD1, B-383LD2, B-383FL).
- M-059 W-PLAN objective 100x/1.25OI (oil iris) (only for B-383DK).
- M-170 W-PLAN PH objective 10x/0.25 (only for B-383PH, B-382PH-ALC).
- M-171 W-PLAN PH objective 20x/0.40 (only for B-383PH, B-382PH-ALC).
- M-172 W-PLAN PH objective 40x/0.65 (only for B-383PH, B-382PH-ALC).
- M-182 W-PLAN PH objective 100x/1.25 (Oil) (only for B-383PH, B-382PH-ALC).
- M-183 IOS W-PLAN PH objective 10x/0.25 (only for B-383PHi, B-382PHi-ALC).
- M-176 IOS W-PLAN PH objective 20x/0.40 (only for B-383PHi, B-382PHi-ALC).
- M-177 IOS W-PLAN PH objective 40x/0.65 (only for B-383PHi, B-382PHi-ALC).
- M-178 IOS W-PLAN PH objective 100x/1.25 (Oil) (only for B-383PHi, B-382PHi-ALC).
- M-144P IOS N-PLAN POL objective 4x/0.10 (only for B-383POL).
- M-145P IOS N-PLAN POL objective 10x/0.25 (only for B-383POL).
- M-146P IOS N-PLAN POL objective 20x/0.40 (only for B-383POL).
- M-147P IOS N-PLAN POL objective 40x/0.65 (only for B-383POL).
- M-149P IOS N-PLAN POL objective 60x/0.80 (only for B-383POL).
- M-148P IOS N-PLAN POL objective 100x/1.25 (OIL/WATER immersion) (only for B-383POL).
- M-335 IOS W-PLAN MET objective 50x/0.75 (only for B-383LD1, B-383LD2, B-383FL, B-383MET).
- M-337 IOS W-PLAN MET objective 4x/0.10 (only for B-383MET).
- M-338 IOS W-PLAN MET objective 10x/0.25 (only for B-383MET).
- M-339 IOS W-PLAN MET objective 20x/0.40 (only for B-383MET).
- M-179 Complete PH Set – W-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 W-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-156 Field diaphragm for Koehler illumination (for all, except B-383POL).
- M-975.1 Ring with blue filter, 45 mm diameter.
- M-977.1 Ring with green filter, 45 mm diameter.
- M-979.1 Ring with yellow filter, 45 mm diameter.
- M-989.1 Ring with frosted glass filter, 45 mm 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-LED<sup>3</sup>). 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.

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## Headquarters and Manufacturing Facilities

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