



LABORATORY MICROSCOPES

BETTER SYNDICATE CO., LTD.

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

B-290 Series



Entry-Level Lab Upright Microscopes

Best Value-for-Money Solutions & Versatile Use

SUITABLE FOR UNIVERSITIES, EXPERTS & ROUTINE LABS

- » The ideal choice for common lab requirements
- » Simply engineered for life-science
- » Ready for phase contrast and darkfield

EXCELLENT PRICE/PERFORMANCE RATIO

- » N-PLAN objectives (160 mm or IOS) for flat images on 20 mm FN
- » Fixed Koehler illumination for crisp and contrasted images
- » Rounded edge, rackless stage to prevent scratches

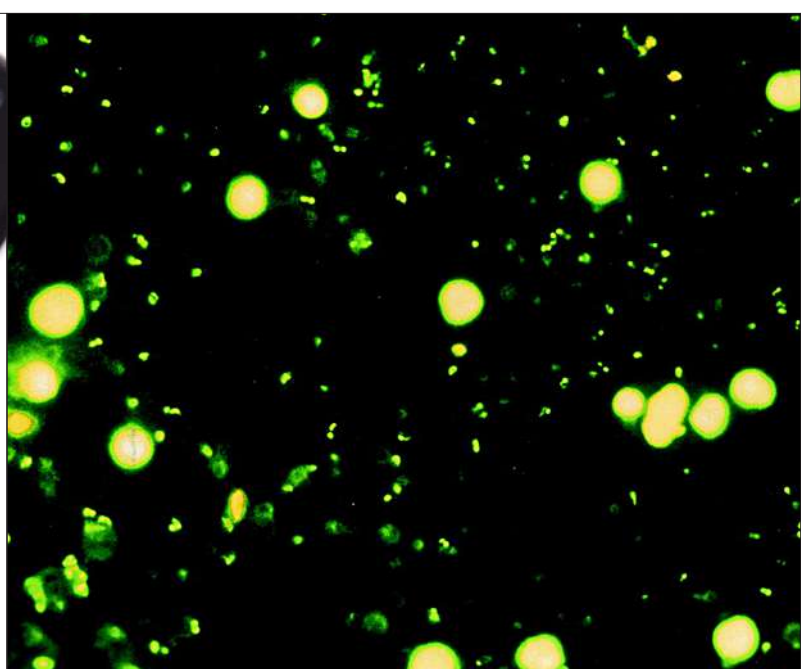


B-290TB - BREAK NEW GROUND WITH DIGITAL IMAGING UNIT

- » Large touch-screen of with fast, responsive and smooth control
- » 360° rotatable, tiltable and easily detachable
- » Simultaneous camera & power connection for long-term operation

B-290LD SERIES - ON-FIELD TBC & MALARIA DIAGNOSIS

- » Ultra-convenient LED fluorescence, blue filter
- » No waiting time, immediate operation
- » Cost-effective, money-saving technology



100x Oil/Water Objective – Only at OPTIKA

SAME OBJECTIVE FOR OIL AND WATER USE

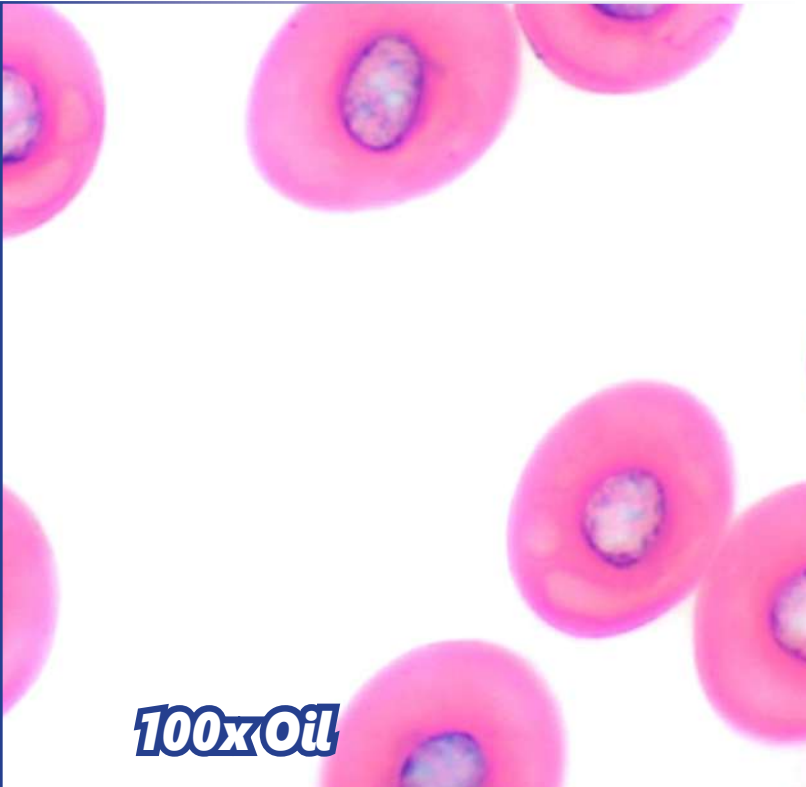
- » Oil represents the best media for high numerical aperture
- » Water combines results with convenience
- » Water is recommended especially for educational purposes

UNPARALLELED TIME & MONEY SAVING

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

2

Laboratory



100xOil



100xWater

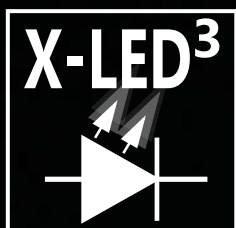
X-LED³ – Only Available at OPTIKA

STATE-OF-THE-ART ILLUMINATION SYSTEM

- » Uncomparable light intensity, exclusive lens & collector design
- » Constant pure-white colour temperature at all intensity levels
- » Unmatched color fidelity, uniformity and brightness

CUT ELECTRICITY BILLS BY 90%

- » Money & energy saving, only 3.6 W
- » More efficient brightness than a 50 W halogen lamp
- » LED long lifetime (65,000 hours = 22 years at 8 hours/day usage)



Halogen

X-LED³



Multi-plug power supply

IOS & Professional Features

2

LABORATORY GRADE OPTICS FOR OUTSTANDING IMAGES

- » Planachromatic optics
- » Designed to ensure field flatness on 20 mm (N-PLAN)
- » IOS Infinity corrected optical system

FULL CONTROL OF YOUR IMAGES

- » Fully settable condenser for perfect imaging
- » Easy to set objective-coded iris diaphragm, focusable & centrabable
- » Phase contrast and darkfield slider available

Laboratory



B-290 Series

This series incorporates all the experience gathered by OPTIKA Microscopes in the field of light microscopy, adapted specifically for common laboratory applications. Suitable for routine microscopy with brightfield, darkfield, phase contrast and LED fluorescence, designed to last.

X-LED³ Exclusive Lighting Source

Special technology able to double the light intensity for incomparable performance, ensuring constant pure-white colour temperature (6,300K colour temperature). Relevant money and energy saving thanks to the incredibly low energy consumptions which allows you to cut the electricity bills by 90%!

The electric consumption (3.6 W only) proves the high efficiency of this system: incredibly high light intensity combined with low consumption.

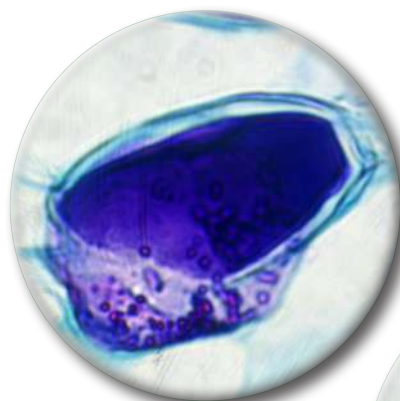
Safe And Convenient Operations

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

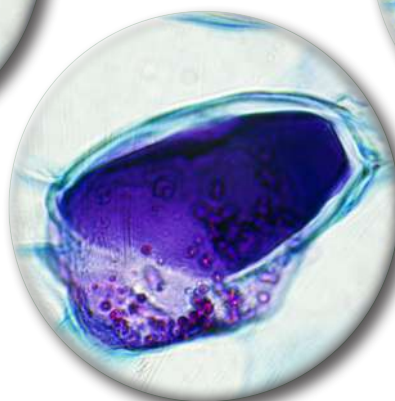
This design gives you a more compact solution and lowers any risk of injury after accidentally hitting the rack with your hands.

Clear Observation With 100x Objective

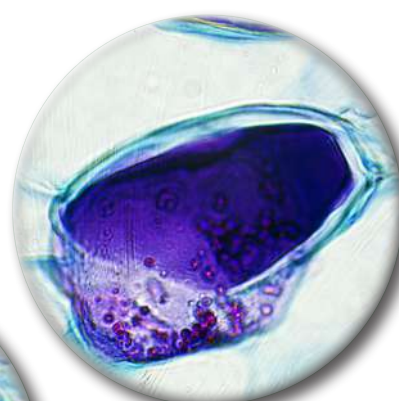
Students and basic users will enjoy B-290 Series for the clear and sharp images they can get using 100x objective with water, thanks to the extremely bright X-LED³ light source and the fully centerable Abbe condenser. Forget about the tedious lens cleaning you are used to when using 100x objective: dirt and dust will not affect your objective.



100x DRY



100x WATER



100x OIL

Pine, one year stem.

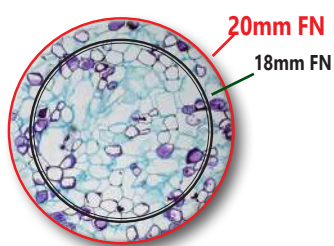
For a professional use, immersion oil is the recommended solution to get the best performance available from any 100x objective.



Entry-Level Lab Upright Microscopes

Laboratory Grade Optics, N-PLAN & IOS N-PLAN System

OPTIKA N-PLAN objectives ensure bright, clear images with excellent flatness and compensation for chromatic aberration. IOS Infinity-corrected optical system prevents image deterioration even if other optical components are added, such as polarizers, beamsplitters and so on.



Large Specimen View (20 mm Field Number)

The **F.O.V.** (field of view) is based on a comfortable diameter of 20 mm. This means that a wide area of the sample can be inspected and allows a natural and easy view, particularly needed in a laboratory environment.

Easy Transportation

B-290 has a carefully shaped design that gives stability and ease in the transportation. Thanks to the handle on the back, it can be safely moved around the classroom or the laboratory.



Get the most out of our accessories



M-666.290 Heating stage

Use the temperature controlled heating stage for specific applications where accurate temperature selection up to 50° C and programmable settings are needed. Requested in research arenas such as microbiology, biochemistry, material science, pharmacology, crystallographic characterization, surface quality control, and in all the temperature related inspections.

M-184 Darkfield condenser

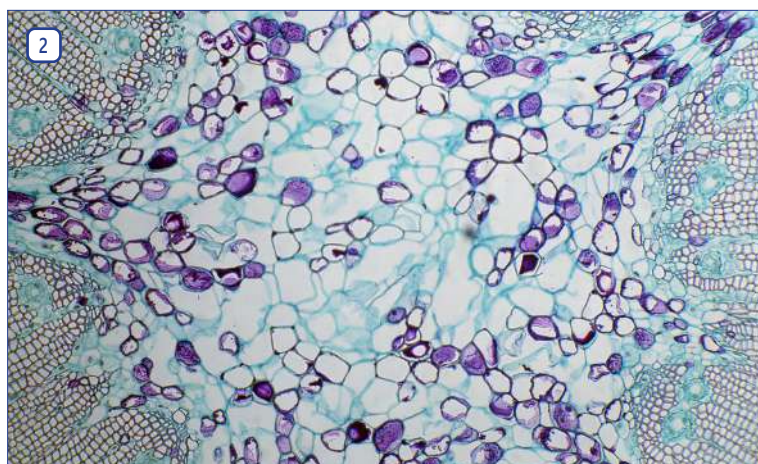
With optional diaphragm M-184 you can easily obtain a darkfield view for dry objectives. M-184 can be placed directly under the condenser without the need of additional operations.



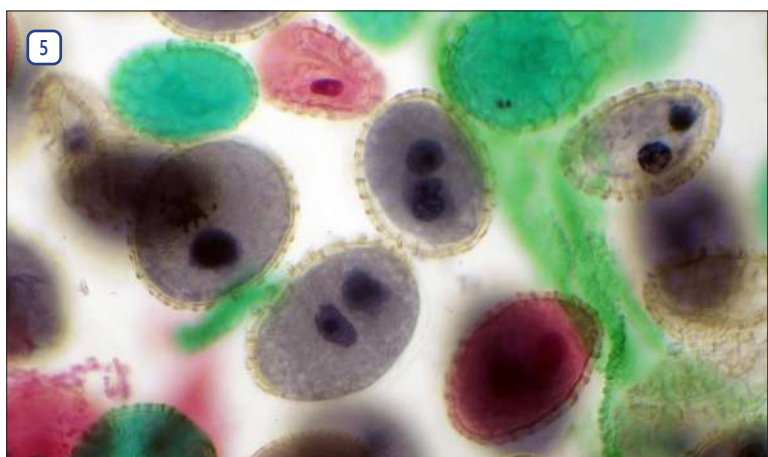
B-290 Series

Legend

1. B-290TB with 360° rotating Digital Imaging Unit for discussion.
2. Pine, one year stem, with B-292 and 10x objective.
3. B-290 Series exclusive X-LED³ illumination system.
4. B-293 used by a teacher.
5. Lilly pollen, with B-292PLi and 20x objective.
6. Ascaris female, with B-293 and 40x objective.
7. Student setting the right focusing on a B-290TB.



Entry-Level Lab Upright Microscopes



B-290 Series - Brightfield Models

B-292PLi



Binocular head with IOS N-PLAN (infinity corrected) objectives, rackless stage and exclusive **X-LED³** for incredibly bright illumination.

Observation mode: Brightfield.

Head: Binocular, 360° rotating and 30° inclined. Interpupillary distance 48-75 mm.

Dioptic adjustment: On both eyepieces.

Eyepieces: WF10x/20 mm, high eye-point and secured by screw.

Nosepiece: Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

IOS N-PLAN 4x/0.10	IOS N-PLAN 10x/0.25
IOS N-PLAN 40x/0.65	IOS N-PLAN 100x/1.25 (Oil/Water)

All with anti-fungus treatment.

Specimen stage: Double layer rackless mechanical sliding stage, 150x139 mm, 75x33 mm X-Y movement range. Vernier scale on the two axes, accuracy: 0.1 mm.

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: Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.

Illumination (Fixed Koehler type): X-LED³ type with white 3.6 W LED (6,300 K) and light intensity control.
Multi-plug 100-240Vac/6Vdc external power supply.

B-293PLi



Trinocular head with IOS N-PLAN (infinity corrected) objectives, rackless stage and exclusive **X-LED³** for incredibly bright illumination.

Observation mode: Brightfield.

Head: Trinocular (fixed, 50/50), 360° rotating and 30° inclined. Interpupillary distance 55-75 mm.

Dioptic adjustment: On both eyepieces.

Eyepieces: WF10x/20 mm, high eye-point and secured by screw.

Nosepiece: Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

IOS N-PLAN 4x/0.10	IOS N-PLAN 10x/0.25
IOS N-PLAN 40x/0.65	IOS N-PLAN 100x/1.25 (Oil/Water)

All with anti-fungus treatment.

Specimen stage: Double layer rackless mechanical sliding stage, 150x139 mm, 75x33 mm X-Y movement range. Vernier scale on the two axes, accuracy: 0.1 mm.

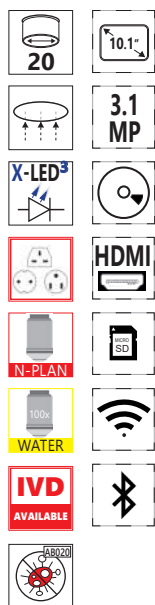
Focusing: Coaxial coarse and fine focusing mechanism with limit stop to prevent the contact between objective and specimen. Adjustable tension of coarse focusing knob.

Condenser: Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.

Illumination (Fixed Koehler type): X-LED³ type with white 3.6 W LED (6,300 K) and light intensity control.
Multi-plug 100-240Vac/6Vdc external power supply.

B-290TB - Microscope with Camera & Digital Imaging Unit

B-290TB



Built-in camera and Digital Imaging Unit with N-PLAN objectives, rackless stage and exclusive **X-LED³** for unmatched performance in illumination. Ideal for discussion group with 360° rotating Digital Imaging Unit.

Observation mode: Brightfield.

Head: Binocular, 360° rotating and 30° inclined. Interpupillary distance from 48 to 75 mm; dioptic adjustment on left eyepiece. Built-in 3.1 MP camera.

Dioptic adjustment: On the left eyepiece tube.

Eyepieces: WF10x/20 mm, high eye-point and secured by screw.

Nosepiece: Quadruple revolving nosepiece, rotation on ball bearings.

Objectives:

N-PLAN 4x/0.10

N-PLAN 10x/0.25

N-PLAN 40x/0.65

N-PLAN 100x/1.25 (Oil/Water)

All with anti-fungus treatment.

Specimen stage: Double layer rackless mechanical sliding stage, 150x139 mm, 75x33 mm X-Y movement range. Vernier scale on the two axes, accuracy: 0.1 mm.

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: Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.

Illumination (Fixed Koehler type): X-LED³ type with white 3.6 W LED (6,300 K) and light intensity control. Multi-plug 100-240Vac/6Vdc external power supply.



UNIQUE FEATURES

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

B-290TB - Microscope with Camera & Digital Imaging Unit

2

The latest OPTIKA digital microscopes with Digital Imaging Unit, open new microscopy horizons, combining high-end optics with innovative digital technology for microscopic imaging. B-290TB includes a 3MP camera with a Digital Imaging Unit. View, capture, analyze and share your images with simplicity and reliability.

DIGITAL IMAGING UNIT TECHNICAL SPECIFICATIONS

Operating system	Windows 11
CPU	Intel® Celeron
CPU speed	1.10 GHz
Graphic card	Intel® HD Graphics 500
RAM	Ram 6 GB DDR3
Display size	LED 10.1" IPS Multi Touch Screen
Display resolution	1920x1200
Storage	Hdd 128 GB (EMMC)
Network	802.11b/g/n/ac, 2.4GHz
Input ports	USB 3.0, Type C, Micro SD card reader, Microphone, DC in
Output ports	Headphone - Micro HDMI
Battery Type	Lithium-ion
Battery capacity	3500 mAh
Power consumption	24.05W
Power supply	12V 2A EU / US
Dimensions (mm)	247 x 165 X 9
Weight (Kg)	0.57
Language	Multilanguage

Intuitive, Yet Powerful Software

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



360° Rotating & Tilting



CAMERA TECHNICAL SPECIFICATIONS

Camera resolution (n° of pixels)	3MP
Signal output	USB 2.0
Sensor Size	1/2.5"
Sensor technology	CMOS
Image format	4\3
Full Image size	2048 x 1536
Pixel size	2.2 x 2.2 micron
Frame rate full resolution	5 frames\sec
Frame rate other resolutions	8 fps (1280x1024) - 30 fps (640x480)
Automatic White Balance	Auto - Man
Automatic Gain Control	Auto - Man
Automatic Back light control	Auto - Man
Exposure control	Auto - Man

Detachable



TB-KBD2 - Accessory keyboard

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

B-380 Series



Middle-Level Routine Lab Upright Microscopes

Just What You Need. Right When Is Needed

ROUTINE IN UNIVERSITIES, LABS & INDUSTRIES

- » Wide range to fulfil specific lab requirements
- » Valuable solutions for life and material sciences
- » Compliant with several observation methods

THE PREFERRED PARTNER FOR ROUTINE TASKS

- » Full planarity optics on 20 mm (N-PLAN) according to ISO 19012-1
- » Fixed Koehler illumination for crisp and contrasted images
- » Rounded edge, rackless stage to prevent scratches



Multiple Observation Methods

BRIGHTFIELD

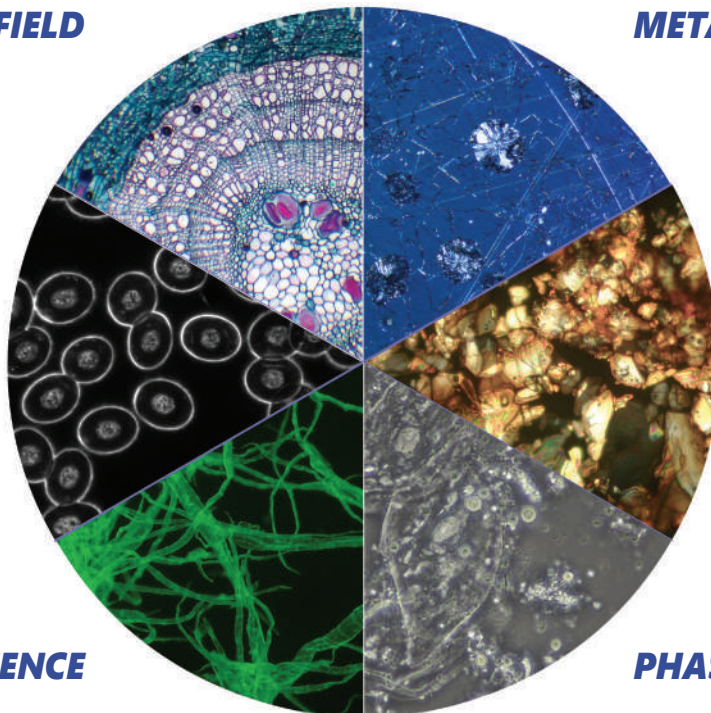
METALLOGRAPHY

DARKFIELD

POLARIZATION

FLUORESCENCE

PHASE CONTRAST



100x Oil/Water Objective – Only at OPTIKA

SAME OBJECTIVE FOR OIL AND WATER USE

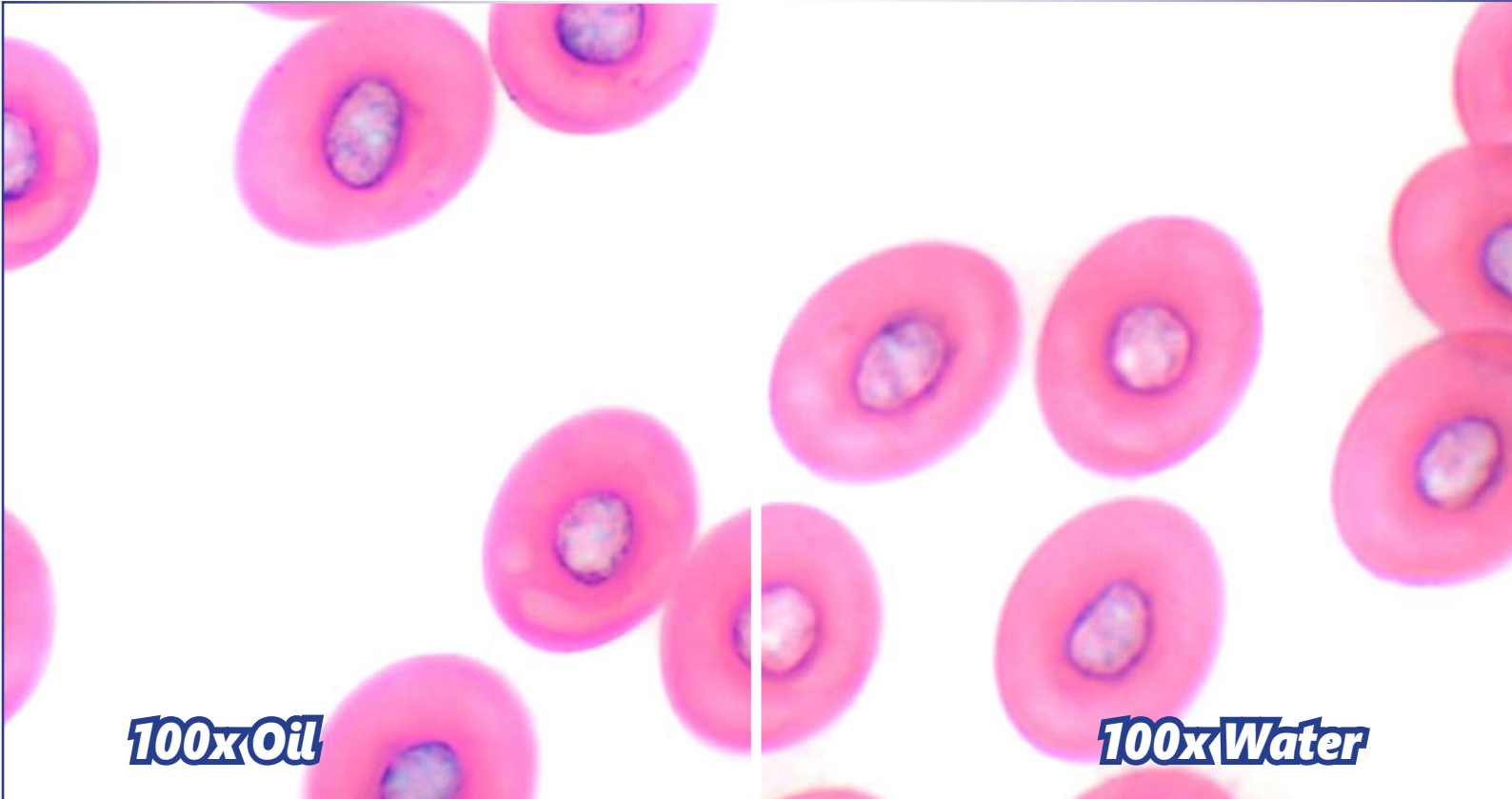
- » Oil represents the best media for high numerical aperture
- » Water combines results with convenience
- » Water is recommended especially for educational purposes

UNPARALLELED TIME & MONEY SAVING

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

2

Laboratory



100x Oil

100x Water

X-LED³ – Only Available at OPTIKA

STATE-OF-THE-ART ILLUMINATION SYSTEM

- » Uncomparable light intensity, exclusive lens & collector design
- » Constant pure-white colour temperature at all intensity levels
- » Unmatched color fidelity, uniformity and brightness

CUT ELECTRICITY BILLS BY 90%

- » Money & energy saving, only 3.6 W
- » More efficient brightness than a 50 W halogen lamp
- » LED long lifetime (65,000 hours = 22 years at 8 hours/day usage)



Halogen

X-LED³



Multi-plug power supply

AUTOMATIC LIGHT CONTROL IN 3 STEPS

- » When another objective is used
- » When the diaphragm aperture changes
- » When processing samples with different opacity

FORGET ABOUT MANUAL LIGHT ADJUSTEMENT

- » Choose the light intensity according to your preference
- » Press the ALC button and the brightness is saved
- » The microscope will automatically regulate the light

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



B-380 Series

This series incorporates all the experience gathered by OPTIKA Microscopes in the field of light microscopy, adapted specifically for common laboratory applications.

Suitable for routine microscopy with brightfield, darkfield (oil and dry), phase contrast, fluorescence and polarized light, designed to be extremely stable on the bench and last long.

Purposely Designed For Intense Use, Effortless

Full of features that help being more comfortable especially in case of long-term use.

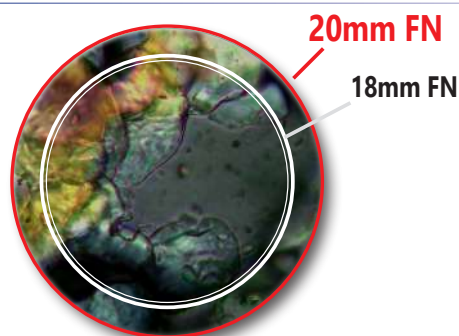
All the main controls are located close to each other to enable minimal movements and reinforce the advantages that the ergonomics brings to this series.

X-LED³ Exclusive Lighting Source

Special technology able to double the light intensity for incomparable performance, ensuring constant pure-white colour temperature (6,300K colour temperature).

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

The electric consumption (3.6 W only) proves the high efficiency of this system: incredibly high light intensity combined with low consumption.



Large Specimen View (20 mm Field Number)

The **F.O.V.** (field of view) is based on a comfortable diameter of 20 mm.

This means that a wide area of the sample can be inspected 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)

Light intensity is automatically adjusted by the microscope itself in order to maintain the same level as the one the user has previously chosen.

No matter if the aperture of the diaphragm changes, if another objective is used, and if the opacity of the sample is different...the microscope will set the light for you according to your preferences.

On **ALC Models**.

Safe And Convenient Operations

Rounded edge 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.



Middle-Level Routine Lab Upright Microscopes

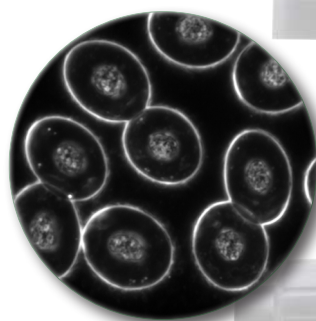
Universal Condenser For Brightfield, Darkfield & Phase

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.



Exclusive X-LED³ Darkfield Condenser

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.



In fluorescence we can offer several options.

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

Traditional, HBO Fluorescence

- » The most used and diffused method, worldwide
- » Wide spectrum range for future upgrades

Innovative, LED Fluorescence

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



B-380 Series

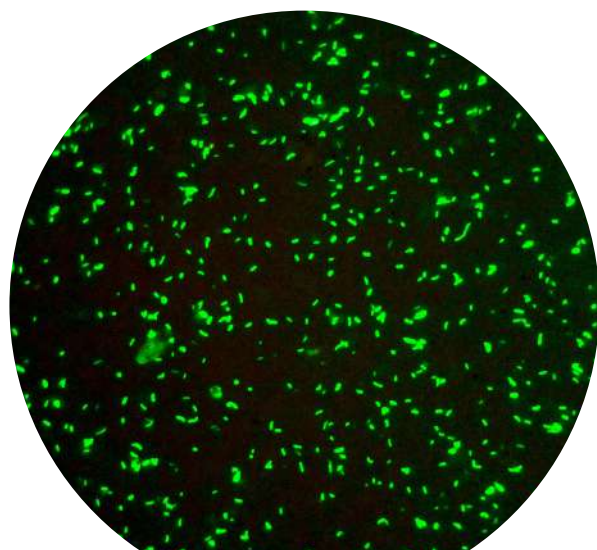


10x - Darkfield

M-185

Darkfield condenser (dry)

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

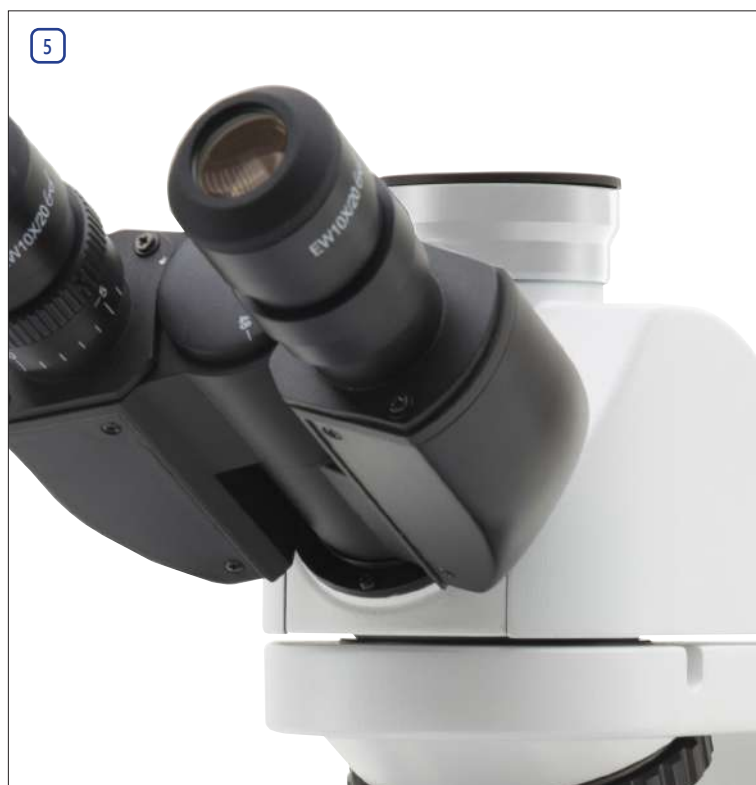
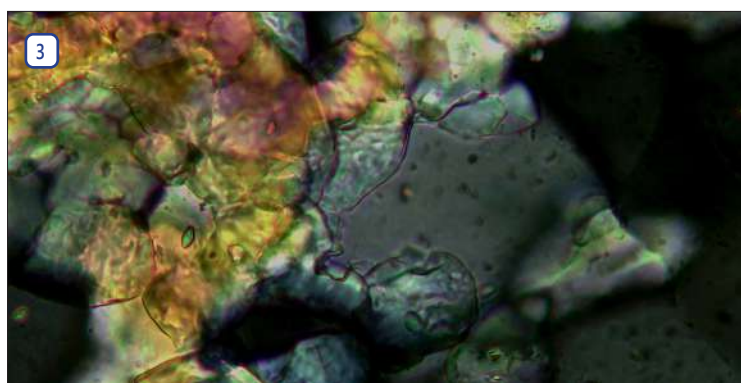
For applications where no cover slide is required (such as sputum smear analysis for tuberculosis diagnosis), the M-335 objective provides excellent results for stunning images.



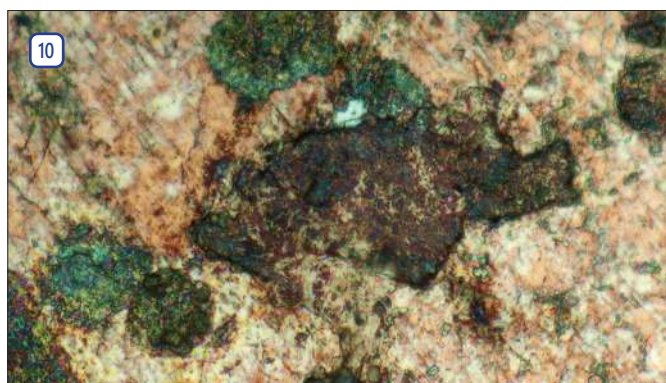
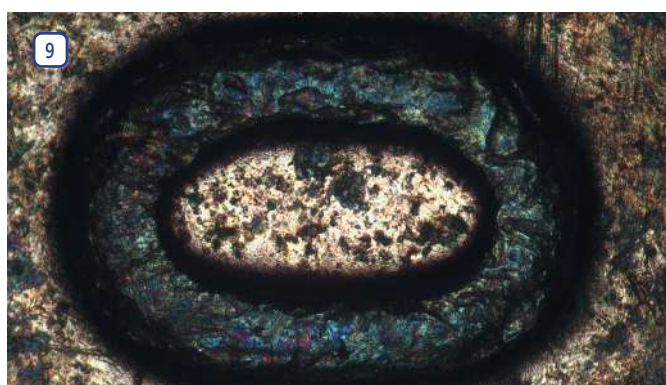
B-380 Series

Legend

1. Planachromatic Phase Contrast objectives.
2. Coded iris diaphragm for each objective.
3. B-383POL, tuff observed under polarized light.
4. Tilia three year stem at 4x 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. Handle for easy and comfortable transportation.
9. Coin at 4x magnification, B-383MET.
10. Coin at 50x magnification, B-383MET.
11. Innovative design of B-380 series.



Middle-Level Routine Lab Upright Microscopes



B-380 Series - Brightfield Models

2

Laboratory

B-382PLi-ALC



Brightfield binocular microscope with IOS N-PLAN (Infinity Corrected) objectives, rackless stage and combining the exclusive **X-LED³** with **ALC** (Automatic Light Control) for great-looking, rich and high-quality view.

Observation mode: Brightfield.

Head: Binocular, 30° inclined, 360° rotating (when ALC cable is unplugged).

Interpupillary distance: Adjustable between 48 and 75 mm.

Dioptric adjustment: On the left eyepiece tube.

Eyepieces: WF10x/20 mm, high eye-point and secured by screw.

Nosepiece: Quintuple revolving nosepiece, rotation on ball bearings.

Objectives:

IOS N-PLAN 4x/0.10	IOS N-PLAN 10x/0.25
IOS N-PLAN 40x/0.65	IOS N-PLAN 100x/1.25 (Oil/Water)

All with anti-fungus treatment.

Specimen stage: Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range.

Focusing: Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Condenser: Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.

Illumination (Fixed Koehler type): X-LED³ with white 3.6 W LED (6,300K) and brightness control. **ALC** system.
Multi-plug 100-240Vac/6Vdc external power supply.

B-383PLi



Brightfield trinocular microscope with IOS N-PLAN (Infinity Corrected) objectives, rackless stage and the exclusive **X-LED³** for great-looking, rich and high-quality view.

Observation mode: Brightfield.

Head: Trinocular (fixed 50/50), 30° inclined, 360° rotating.

Interpupillary distance: Adjustable between 48 and 75 mm.

Dioptric adjustment: On the left eyepiece tube.

Eyepieces: WF10x/20 mm, high eye-point and secured by screw.

Nosepiece: Quintuple revolving nosepiece, rotation on ball bearings.

Objectives:

IOS N-PLAN 4x/0.10	IOS N-PLAN 10x/0.25
IOS N-PLAN 40x/0.65	IOS N-PLAN 100x/1.25 (Oil/Water)

All with anti-fungus treatment.

Specimen stage: Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range.

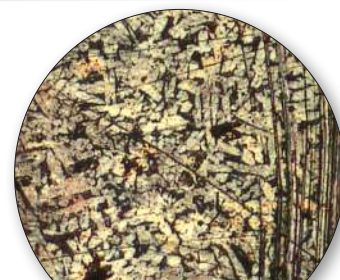
Focusing: Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

Condenser: Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.

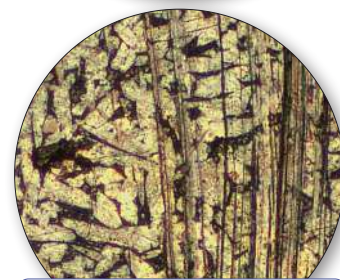
Illumination (Fixed Koehler type): X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-383MET - Metallurgical Microscope

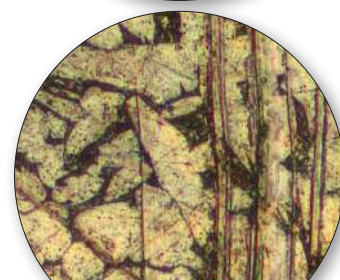
Brightfield upright microscope with IOS W-PLAN MET objectives and metallurgical attachment combining the exclusive **X-LED³** lighting source both for incident and transmitted illumination. The NCG (no cover glass) objectives are especially designed for microscopy use without a cover slip ideal for metallographic samples and other opaque specimens.



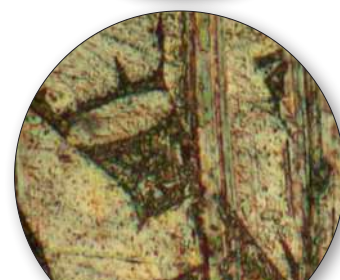
5x



10x



20x



50x

Part	Description
Observation mode:	Brightfield, incident polarized light.
Epi-illumination and polarizing filters:	X-LED ³ with white 3.6 W LED (6.300 K) with brightness control. Field and aperture diaphragms, polarizer & analyzer filters.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 48 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/20 mm, high eye-point and secured by screw.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.

Part	Description
Objectives (strain-free):	IOS W-PLAN MET 5x/0.12 IOS W-PLAN MET 10x/0.25 IOS W-PLAN MET 20x/0.40 IOS W-PLAN MET 50x/0.75 All with anti-fungus treatment.
Specimen stage:	Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range. With tempered glass plate.
Focusing:	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
Condenser:	Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable.
Transmitted illumination (Fixed Koehler type):	X-LED ³ with white 3.6 W LED (6.300 K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-380 Series - Comparison chart

Model	Head	Eyepieces	Nosepiece	Objectives	Stage	Focusing	Condenser	Illumination
B-382PL-ALC	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/ water)	Rackless double layer, 150x139mm, moving range 75x33mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	3.6 W X-LED ³ , brightness control, ALC control. Fixed Koehler
B-383PL	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/ water)	Rackless double layer, 150x139mm, moving range 75x33mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-382PLi-ALC	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/ water)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	3.6 W X-LED ³ , brightness control, ALC control. Fixed Koehler
B-383PLi	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/ water)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-382PH-ALC	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	W-PLAN 4x, 10xPH, 40xPH, 100xPH (oil)	Rackless double layer, 150x139mm, moving range 75x33mm	Coaxial coarse and fine, limit stop, adjustable tension	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED ³ , brightness control, ALC control. Fixed Koehler
B-383PH	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	W-PLAN 4x, 10xPH, 40xPH, 100xPH (oil)	Rackless double layer, 150x139mm, moving range 75x33mm	Coaxial coarse and fine, limit stop, adjustable tension	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-382PHi-ALC	Binocular, 30° inclined	WF 10x/20	Quintuple, reversed	IOS W-PLAN 10xPH, 20xPH, 40xPH, 100xPH (oil)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED ³ , brightness control, ALC control. Fixed Koehler
B-383PHi	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS W-PLAN 10xPH, 20xPH, 40xPH, 100xPH (oil)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-383DK	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	N-PLAN 4x, 10x, 40x, W-PLAN 100x (oil, with iris diaphragm)	Rackless double layer, 150x139mm, moving range 75x33mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable. Additional darkfield condenser, N.A. 1.36, built-in X-LED ³	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-383FL	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 20x, 40x, 100x (oil/water)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	Transmitted: 3.6 W X-LED ³ , brightness control. Fixed Koehler Incident: HBO 100 W high- pressure mercury bulb
B-383LD	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS N-PLAN 4x, 10x, 20x, 40x, 100x (oil/water)	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	Transmitted: 3.6 W X-LED ³ , brightness control. Fixed Koehler Incident: High-power blue LED
B-383POL	Trinocular, 30° inclined, 360° rotating	WF 10x/20 (one with crosshair reticle)	Quadruple, reversed	Strain-free IOS N-PLAN POL 4x, 10x, 40x, 60x	Round, 360° rotating, 160mm diameter, with sample clips and stop knob	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable. With rotating polarizer	3.6 W X-LED ³ , brightness control. Fixed Koehler
B-383MET	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quintuple, reversed	IOS W-PLAN MET 5x, 10x, 20x, 50x	Rackless double layer, 233x147mm, moving range 78x54 mm	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, iris diaphragm, focusable and centrable	Transmitted and incident: 3.6 W X-LED ³ , brightness control. Fixed Koehler