

**OPTIKA<sup>®</sup>**  
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

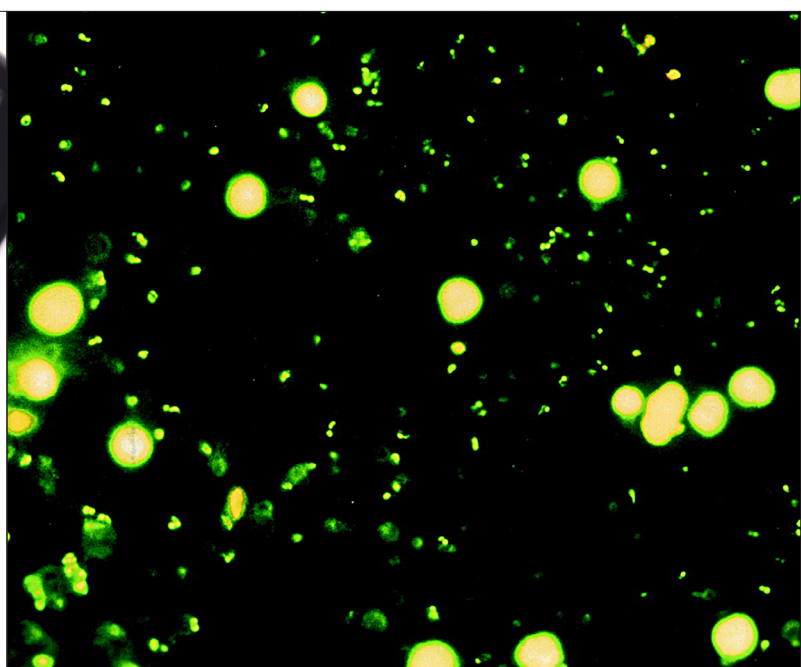
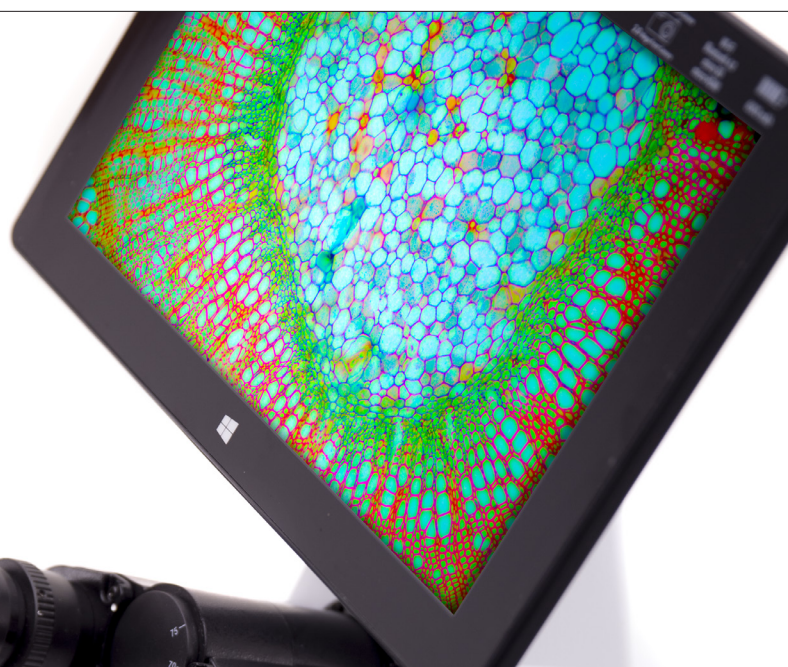


## B-290TB - BREAK NEW GROUND WITH WINDOWS TABLET

- » Large touch-screen of 10.1" 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



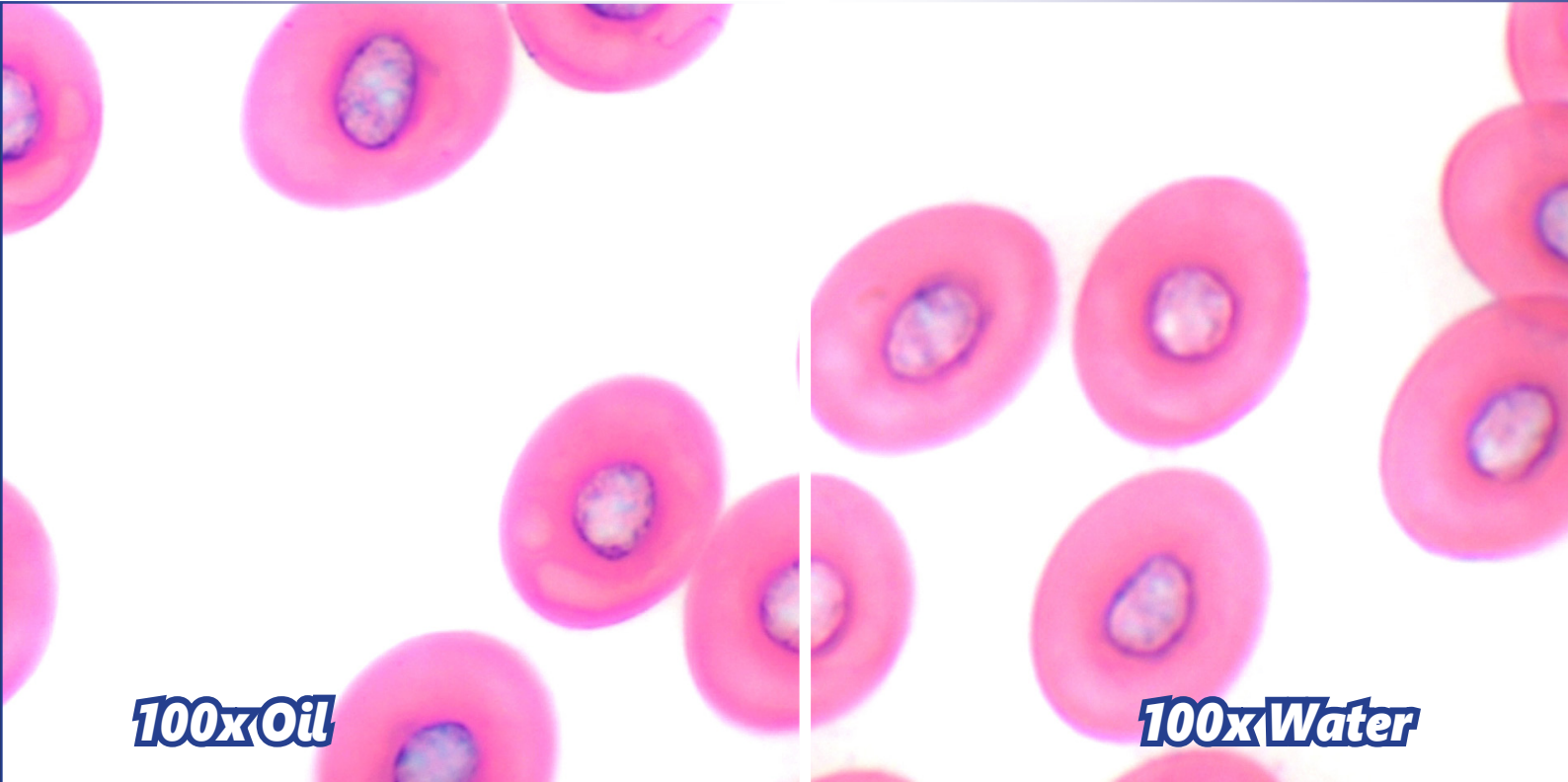
# **100x Oil/Water Objective** – Only at OPTIKA

## **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



**100x Oil**

**100x Water**

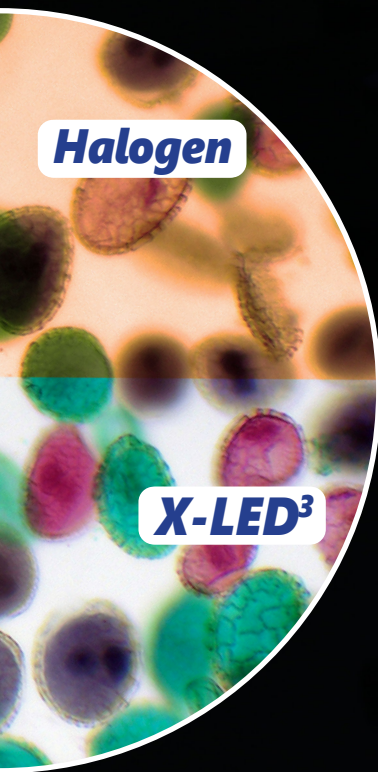
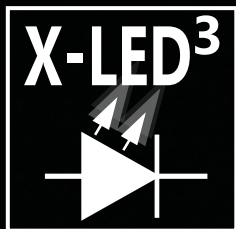
# X-LED<sup>3</sup> – Only Available at OPTIKA

## 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-LED<sup>3</sup>



Multi-plug power supply



# IOS & Professional Features

## 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 & centrabale
- » Phase contrast and darkfield slider available



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

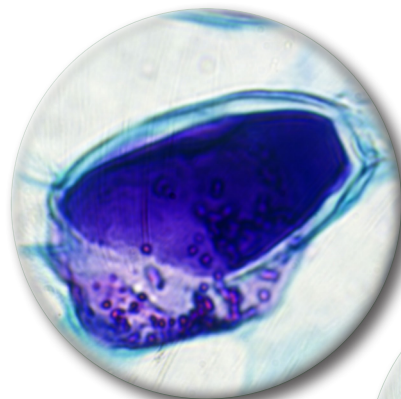
Special technology able to double the light intensity for incomparable performance, ensuring constant pure-white colour temperature (6,300K colour temperature). Relevant money and energy saving thanks to the incredibly low energy consumptions which allows you to cut the electricity bills by 90%!  
The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

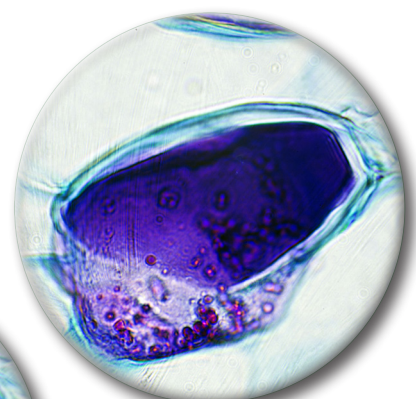
Rounded edge rackless stage has been designed with a belt-driven mechanism that allows a smooth movement without any protruding part.  
This design gives you a more compact solution and lowers any risk of injury after accidentally hitting the rack with your hands.

### Clear Observation With 100x Objective

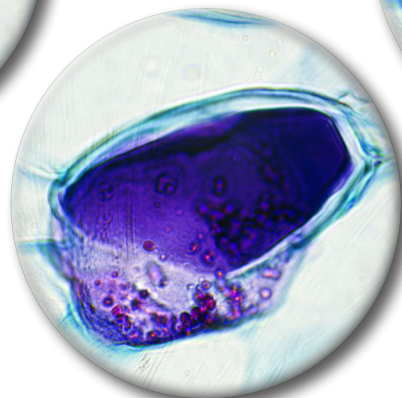
Students and basic users will enjoy B-290 Series for the clear and sharp images they can get using 100x objective with water, thanks to the extremely bright X-LED<sup>3</sup> light source and the fully centerable Abbe condenser. Forget about the tedious lens cleaning you are used to when using 100x objective: dirt and dust will not affect your objective.



100x DRY



100x OIL



100x WATER

### Pine, one year stem.

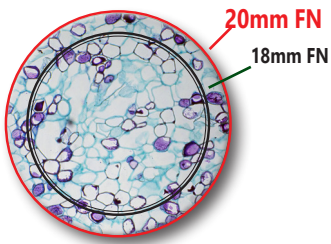
For a professional use, immersion oil is the recommended solution to get the best performance available from any 100x objective.



# 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.

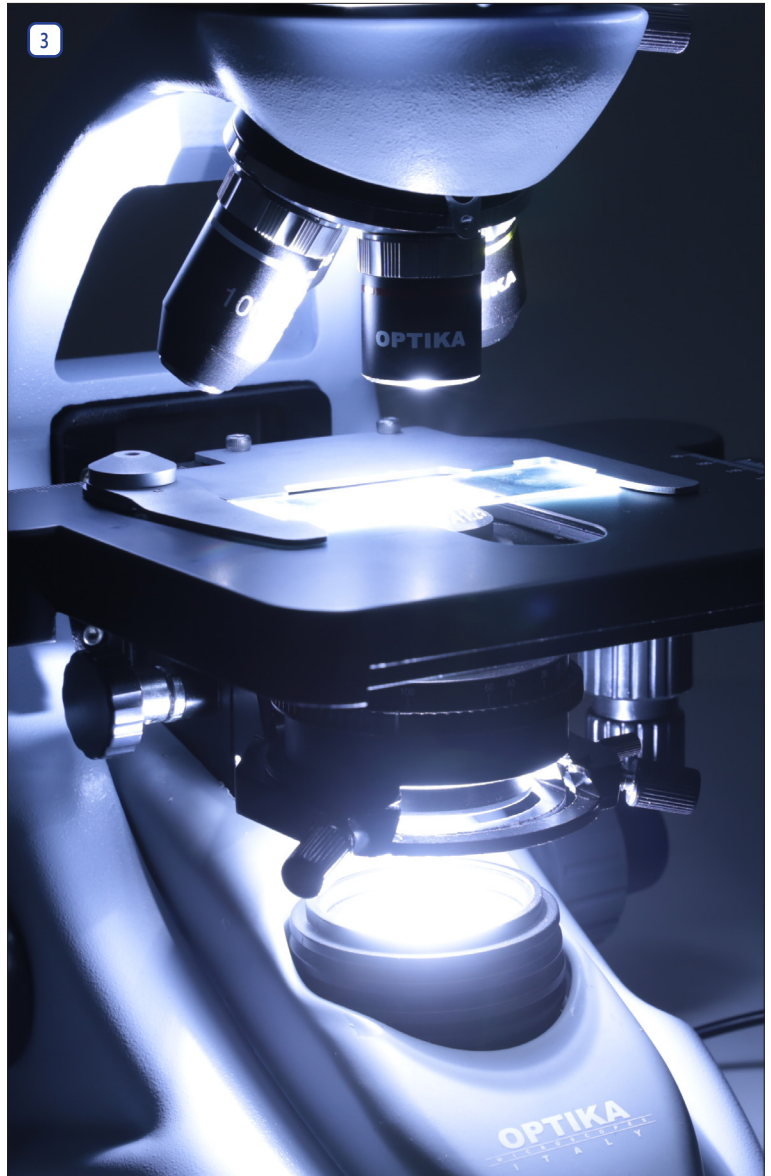
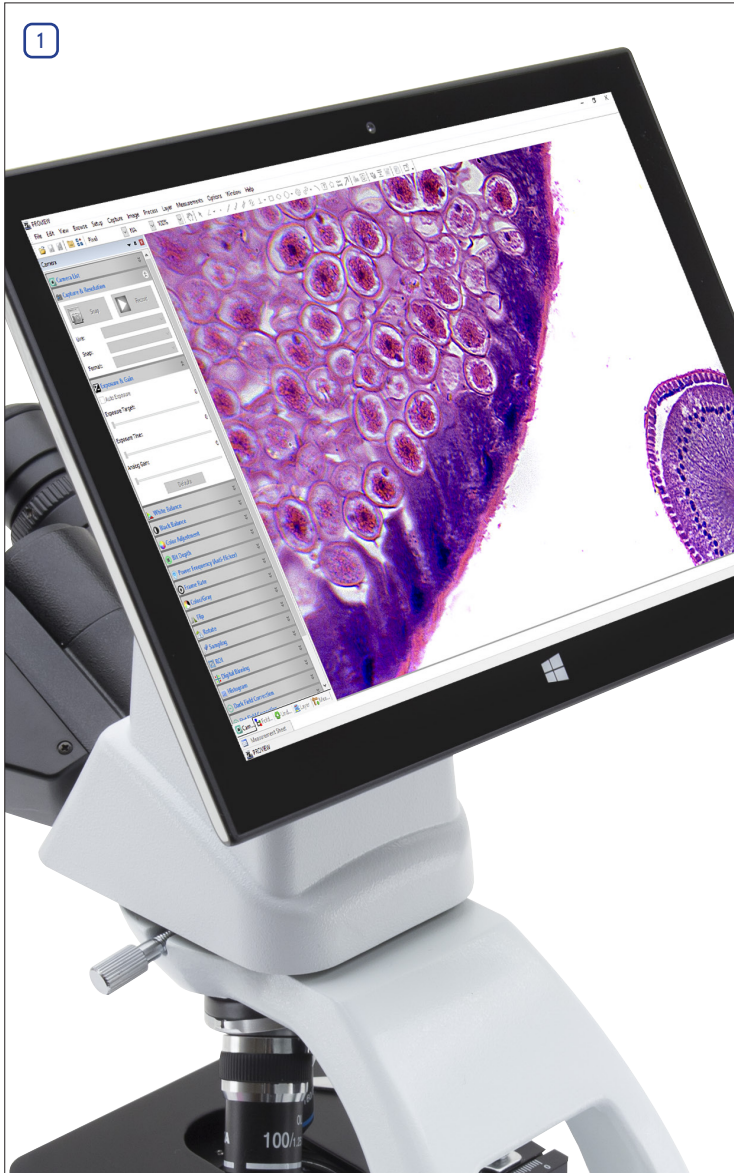
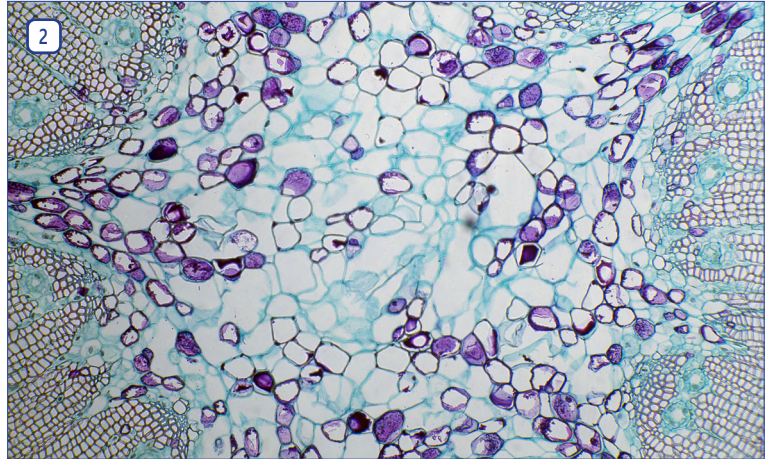


**DARKFIELD CONDENSER**

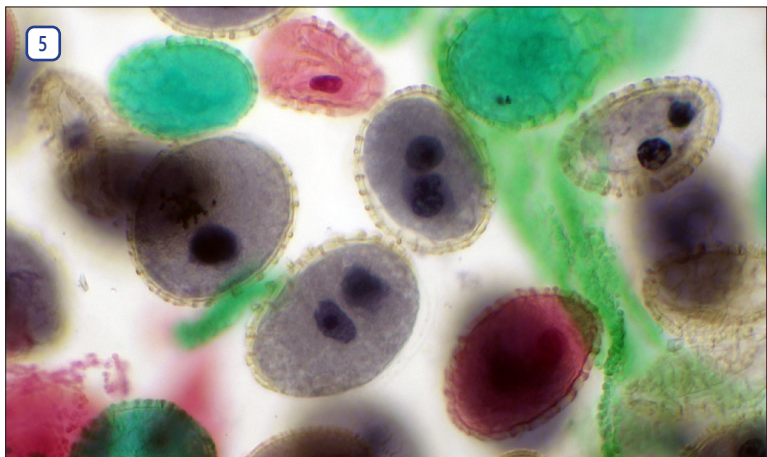
## B-290 Series

### Legend

1. B-290TB with 360° rotating tablet PC for discussion.
2. Pine, one year stem, with B-292 and 10x objective.
3. B-290 Series exclusive X-LED<sup>3</sup> 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-LED<sup>3</sup>** for incredibly bright illumination.

**Observation mode:** Brightfield.

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

**Dioptric 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-LED<sup>3</sup> type with white 3.6 W LED (6,300 K) and light intensity control.  
Multi-plug 100-240Vac/6Vdc external power supply.

# B-290 Series - Comparison Chart

Model	Head	Eyepieces	Nosepiece	Objectives	Stage	Focusing	Condenser	Illumination
<b>B-292</b>	Binocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 150x139 mm, moving range 75x33 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> , brightness control. Fixed Koehler
<b>B-292PLi</b>	Binocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 150x139 mm, moving range 75x33 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> , brightness control. Fixed Koehler
<b>B-293</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 150x139 mm, moving range 75x33 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> , brightness control. Fixed Koehler
<b>B-293PLi</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 150x139 mm, moving range 75x33 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> , brightness control. Fixed Koehler
<b>B-290TB</b>	Binocular, 30° inclined, 360° rotating, with tablet	WF 10x/20	Quadruple, reversed	N-PLAN 4x, 10x, 40x, 100x (oil/water)	Double layer, 150x139 mm, moving range 75x33 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> , brightness control. Fixed Koehler

Model	Head	Eyepieces	Nosepiece	Objectives	Stage	Condenser	Fluorescence	Illumination
<b>B-292LD1.50</b>	Binocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 10x, 20x, 40x. W-PLAN MET 50x	Double layer, 150x139 mm, moving range 75x33 mm, X-axis rackless	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W Fluo LED; Blue Filterset	3.6 W X-LED <sup>3</sup> , brightness control
<b>B-292LD1</b>	Binocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 10x, 20x, 40x. W-PLAN 100x (dry)	Double layer, 150x139 mm, moving range 75x33 mm, X-axis rackless	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W Fluo LED; Blue Filterset	3.6 W X-LED <sup>3</sup> , brightness control
<b>B-293LD1.50</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 10x, 20x, 40x. W-PLAN MET 50x	Double layer, 150x139 mm, moving range 75x33 mm, X-axis rackless	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W Fluo LED; Blue Filterset	3.6 W X-LED <sup>3</sup> , brightness control
<b>B-293LD1</b>	Trinocular, 30° inclined, 360° rotating	WF 10x/20	Quadruple, reversed	IOS N-PLAN 10x, 20x, 40x. W-PLAN 100x (dry)	Double layer, 150x139 mm, moving range 75x33 mm, X-axis rackless	Abbe N.A. 1.25, iris diaphragm, focusable and centrabale	3.6 W Fluo LED; Blue Filterset	3.6 W X-LED <sup>3</sup> , brightness control

## Optical performance B-292, B-293 and B-290TB

Eyepiece		10x (M-160)			15x (M-161)		20x (M-162)	
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 (N-PLAN 160 mm)	0.10	15.20	40x	5	60x	4	80x	2.5
10x (N-PLAN 160 mm)	0.25	5.50	100x	2	150x	1.6	200x	1
20x (N-PLAN 160 mm)	0.40	5.00	200x	1	300x	0.8	400x	0.5
40x (N-PLAN 160 mm)	0.65	0.45	400x	0.5	300x	0.4	800x	0.25
60x (N-PLAN 160 mm)	0.80	0.13	600x	0.33	900x	0.26	1200x	0.16
100x (N-PLAN 160 mm)	1.25 (oil/water)	0.13	1000x	0.2	1500x	0.16	2000x	0.1

## Optical performance B-292PLi, B-293PLi and LD models

Eyepiece		10x (M-160)			15x (M-161)		20x (M-162)	
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 (IOS N-PLAN)	0.10	16.80	40x	5	60x	4	80x	2.5
10x (IOS N-PLAN)	0.25	5.80	100x	2	150x	1.6	200x	1
20x (IOS N-PLAN)	0.40	5.10	200x	1	300x	0.8	400x	0.5
40x (IOS N-PLAN)	0.65	0.43	400x	0.5	300x	0.4	800x	0.25
50x (IOS W-PLAN MET, no cover)	0.75	0.32	500x	0.4	750x	0.32	1000x	0.2
60x (IOS N-PLAN)	0.80	0.14	600x	0.33	900x	0.26	1200x	0.16
100x (IOS N-PLAN)	1.25 (oil/water)	0.13	1000x	0.2	1500x	0.16	2000x	0.1
100x (IOS W-PLAN, no cover)	0.80 (dry)	3.20	1000x	0.2	1500x	0.16	2000x	0.1

# B-290 Series - Accessories

## Eyecups & Eyepieces

M-001	Huygens 5x eyepiece
M-008.1	WF10x/20 eyepiece, high eyepoint, with pointer, rubber cup
M-160	EW10x/20 eyepiece, high eyepoint, with rubber cup
M-161	EW15x/16 eyepiece, with rubber cup
M-162	WF20x/10 eyepiece
M-163	EW10x/20 micrometric eyepiece, high eyepoint, with rubber cup

## Objectives

### N-PLAN

M-164	N-PLAN objective 4x/0.10
M-165	N-PLAN objective 10x/0.25
M-166	N-PLAN objective 20x/0.40
M-167	N-PLAN objective 40x/0.65
M-168	N-PLAN objective 60x/0.85
M-169	N-PLAN objective 100x/1.25 (oil)

### IOS N-PLAN

M-144	IOS N-PLAN objective 4x/0.10
M-145	IOS N-PLAN objective 10x/0.25
M-146	IOS N-PLAN objective 20x/0.40
M-147	IOS N-PLAN objective 40x/0.65
M-149	IOS N-PLAN objective 60x/0.80
M-148	IOS N-PLAN objective 100x/1.25 (oil)

### IOS W-PLAN

M-634.1	IOS W-PLAN objective 50x/0.95 (oil)
M-1120.N	IOS W-PLAN PH objective 10x/0.25
M-1121.N	IOS W-PLAN PH objective 20x/0.40
M-1122.N	IOS W-PLAN PH objective 40x/0.65
M-335	IOS W-PLAN MET objective 50x/0.75
M-698.2	IOS W-PLAN MET objective 100x/0.80 (dry)

## Stages

M-175	Rotating stage for polarising set (for 150x139mm rackless stage)
M-666.290	Heating stage (on newly purchased microscopes, for 150x139mm stage), multiplug

## Condensers & Filters

M-174	Polarising set (filters only)
M-184	Darkfield stop for condenser
M-971	Plane-concave mirror, with base
M-975	Blue filter, 45mm diameter
M-977	Green filter, 45mm diameter
M-979	Yellow filter, 45mm diameter
M-989	Frosted glass filter, 45mm diameter
M-1124.1	Brightfield condenser (with phase slider slot) (except for B-292, B-293 and B-290TB)
M-1124.NO	Phase contrast condenser with insert slide 10x/20x-40x (except for B-292, B-293 and B-290TB)

## Camera Adapters

M-114	0.5x C-Mount projection lens
M-115	0.35x C-Mount projection lens
M-118	0.75x C-Mount projection lens
M-173	Photo adapter for APS-C and full frame reflex cameras (trino head)

## Miscellaneous

15104	Cleaning kit
15008	Immersion oil, 10ml
15009	Immersion oil, 100ml
DC-002	Plastic dust cover, medium, 490(l)x490(h) mm (except for B-290TB)
DC-003	TNT dust cover, medium, 600(l)x550(h) mm (only for B-290TB)
TB-KBD1	Keyboard for tablet (only for B-290TB)
M-005	Micrometric slide, 26x76mm, with 2 scales (1mm/100 & 10mm/100)
M-069	Solar charger
M-1380	Centering telescope, 23mm diameter (except for B-292, B-293 and B-290TB)
VP-290	IQ/OQ/PQ manual for B-290 series
VP-TB	IQ/OQ/PQ manual for TB series
AB-020	Antibacterial surface treatment, only for newly purchased microscope

### M-069 - Solar charger

Included battery: rechargeable – Lithium-Poly.  
Capacity: 2500 mAh. - Output voltage: 5 Vdc.  
Autonomy: over 6 hours at medium intensity (X-LED<sup>3</sup>).  
Charging models: with solar panel (12h),  
with external USB power supply (2.5h)



### 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.



# WolfLabs

**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.