OPTIKA®
MICROSCOPES
ITALY

B-510 Series

Advanced Routine Lab Upright Microscopes

Born To Be Professional

HIGH-GRADE CONFIGURATIONS FOR PROFESSIONALS

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

AN AFFORDABLE PARTNER WITH HIGH-END FEATURES

» IOS W-PLAN objectives for flat images on 22 mm FN
» Full Koehler illumination for enhanced images
» Rounded edge, rackless stage to prevent scratches

Optically Impressive

MAINTAINING GOOD EYESIGHT

» 10x/22 eyepieces for large specimen view
» Comfortable rubber cup to get rid of annoying external light
» High eye-point for glasses wearers, dioptric adjustment (left eyepiece)

B-510 & IOS W-PLAN: THE PERFECT COMBINATION

» IOS Infinity corrected optical system
» Full planarity optics on 22 mm (W-PLAN) according to ISO 19012-1
» High-grade Semi-Apo lens available ideal for fluorescence

An Extensive Range of Different Configurations

THE MODELS FOR ASBESTOS TESTING IN ENVIRONMENTAL MONITORING

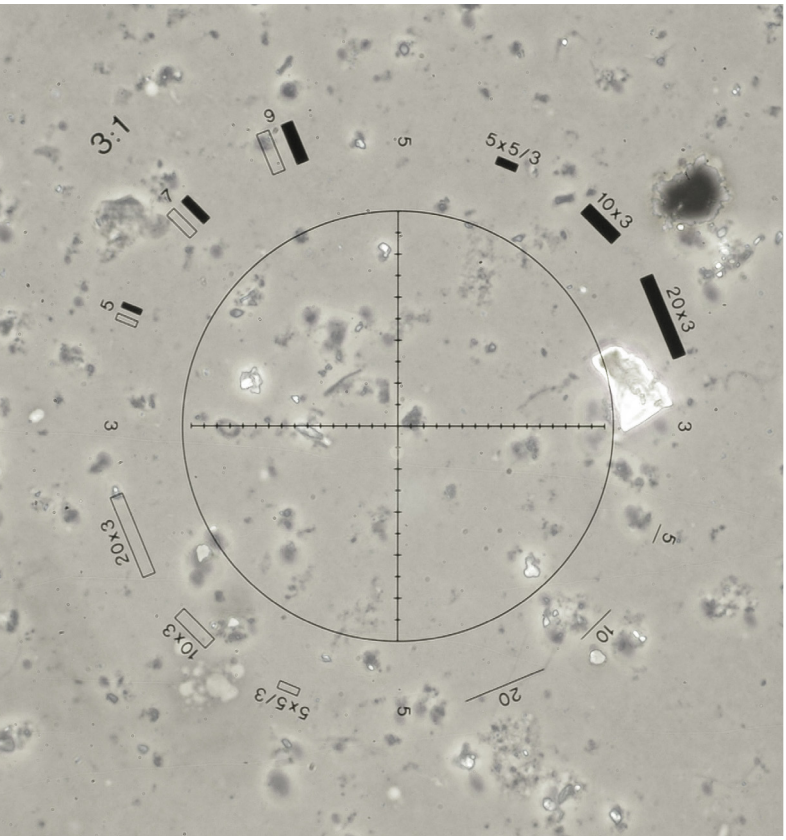
» B-510ASB measures fiber concentrations in air and includes 40xPH lens and 12.5x Walton & Beckett eyepieces

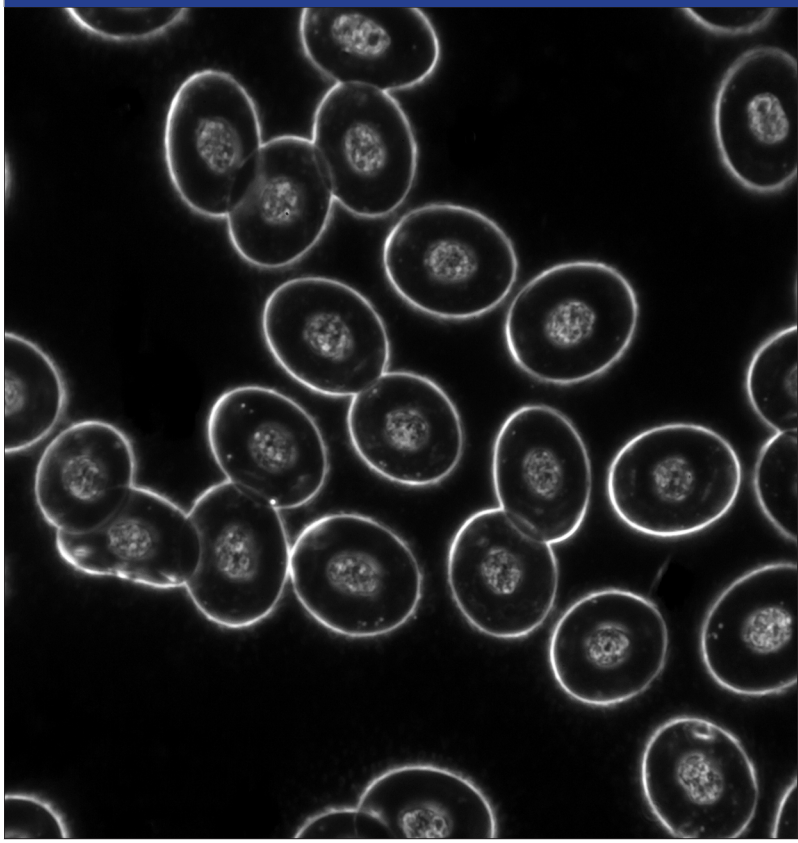
» B-510POL & B-510POL-I for bulk/fiber class identification

B-510DK - THE DEDICATED MODEL FOR FRESH BLOOD ANALYSIS

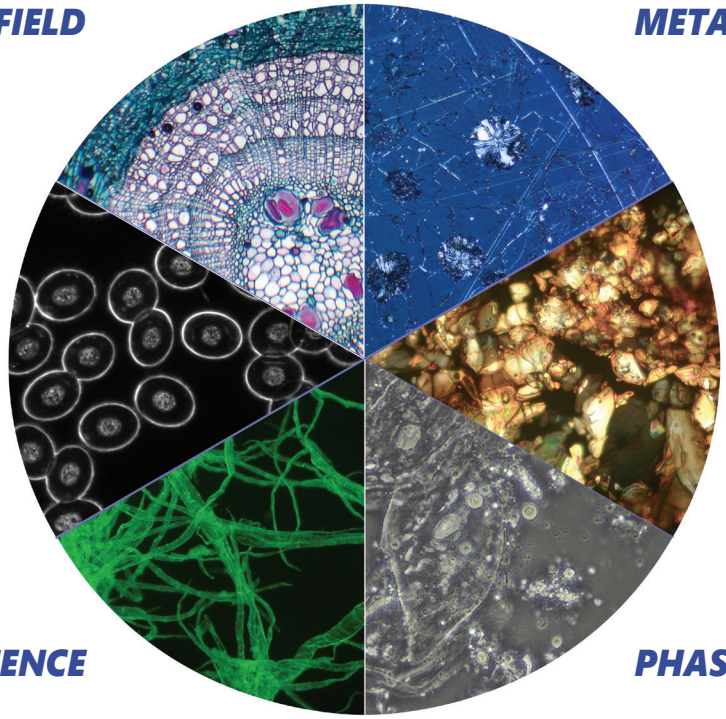
» Exclusive X-LED³ darkfield cardioid condenser with high N.A. 1.36 and the new IOS W-PLAN 100x oil iris objective

» Brightfield condenser also supplied





Multiple Observation Methods



BRIGHTFIELD

METALLOGRAPHY

DARKFIELD

POLARIZATION

FLUORESCENCE

PHASE CONTRAST

Many Specimens, Many Observers - Intense Productivity

INCREASE YOUR SAMPLE THROUGHPUT

» Large, resistant stage to easily and quickly process 2 samples
» Ergonomic design and controls for extended operation
» Convenient handle for easy transportation

DISCUSSION BRIDGES FOR SIMULTANEOUS OBSERVATIONS AND TEACHING

» RGB pointer with brightness adjustment for the main observer
» Face-to-face attachment with 1 extra viewing head, 20mm FN
» Side attachment with 1, 2 & 4 extra viewing heads, 20mm FN

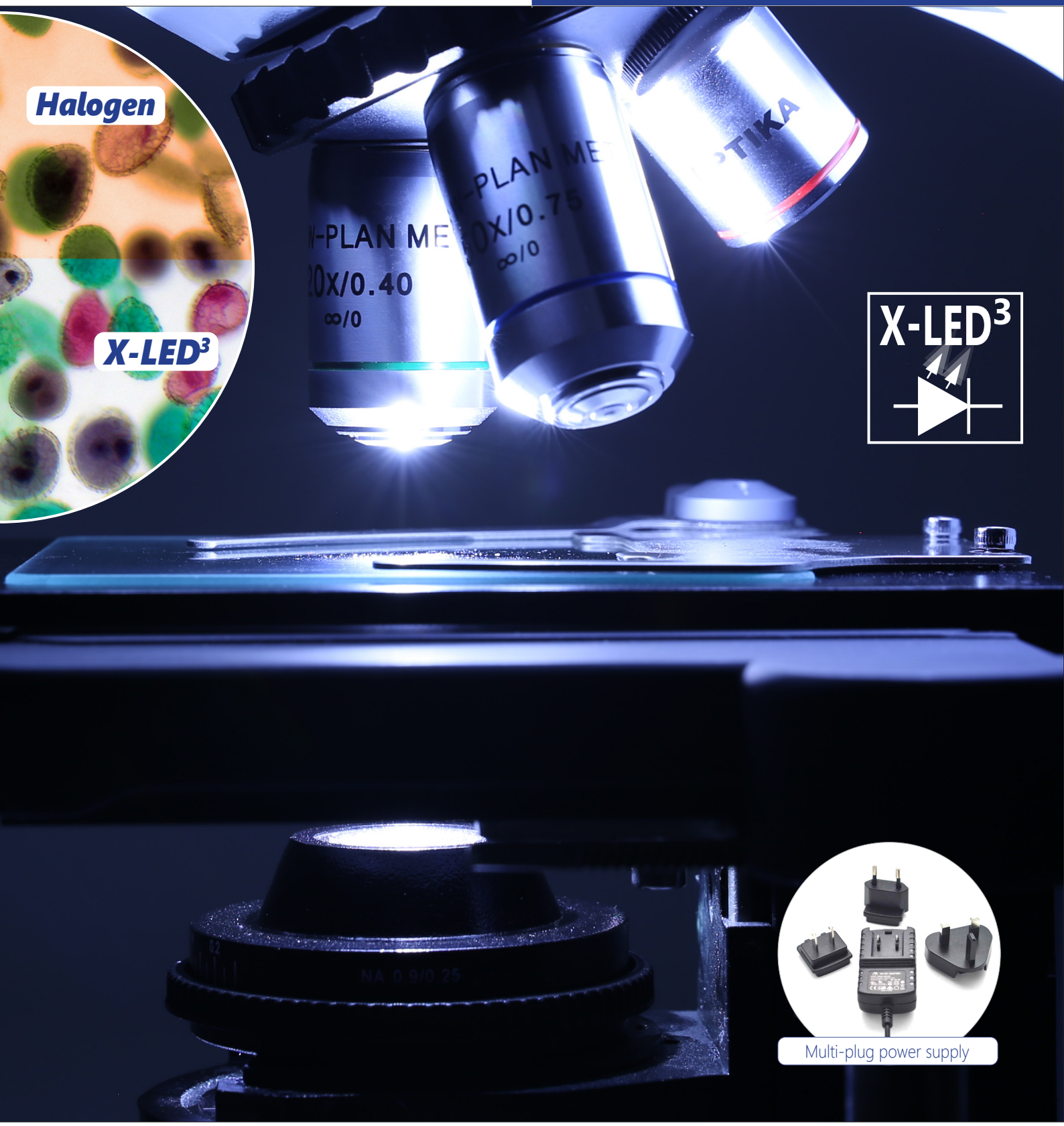
Multi-Head Discussion Microscopes

With discussion bridges, up to 5 people/colleagues can observe the same image on B-510. Ideal for teaching and training students, especially in the medical field. The main observer and additional viewers will benefit of an extremely homogeneous light conditions, with a three-colour pointer with settable intensity to highlight points of interest.

X-LED³ - Only Available at OPTIKA

STATE-OF-THE-ART ILLUMINATION SYSTEM
» Uncomparable light intensity, exclusive lens & collector design
» Constant pure-white color 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)



Go Digital - Vivid Colors & Contrast For Stunning Images

STAY CONNECTED WITH YOUR SPECIMEN, EASILY

» Trincular port to be always updated with the latest technology cameras, even in the future
» Wide range of cameras matching all the needs, including the more specific ones
» Modern C-mount focusable professional adapters for all kinds of cameras

PROFESSIONAL IMAGE ANALYSIS

» Multi-language software for live-view, picture and video in different file formats
» Advanced functions for pictures processing (EDF, stitching, multi-fluorescence combine)
» Powerful tools to perform measurements and generate custom reports

B-510 Series

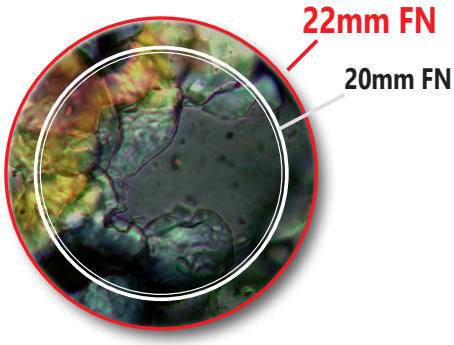
OPTIKA B-510 Series meets a wide variety of analysis applications, thanks to the comprehensive range of microscope models equipped with enhanced and impressive optics, a wide field of view of 22 mm, the state-of-the-art, exclusive X-LED lighting source and Koehler illuminator to produce high sample contrast and homogeneous bright light.

A Perfect Downgrading of Top-Level Series

Many components of B-510 come from the B-810/1000 Series, the top-level in OPTIKA range, to ensure the state-of-the-art performance and at the same time an incredible level of reliability and durability. Its excellent quality/price ratio is achieved through an intelligent rationalization of production costs and choice of materials.

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 (22 mm Field Number)

The **F.O.V.** (field of view) is based on a comfortable diameter of 22 mm.
This means that an extra wide area of the sample can be inspected and allows a natural and easy view, particularly needed in a laboratory environment.

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

Advanced Routine Lab Upright Microscopes

Universal Condenser For Brightfield, Darkfield & Phase
OPTIKA B-510 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-510BF / B-510ERGO - Brightfield Microscope

Advanced routine laboratory microscope for brightfield observations with IOS W-PLAN objectives and rackless stage.
The high-efficiency ***X-LED³*** makes it reliable for all transmitted light observations for great-looking, rich and high-quality view.

B-510BF

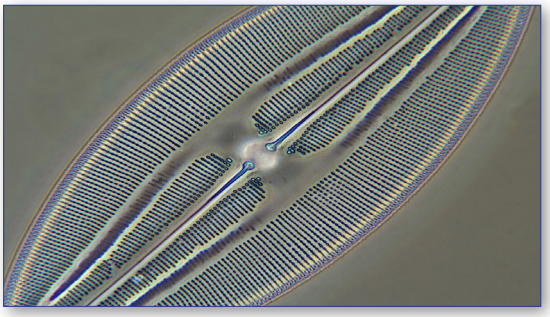
B-510ERGO

Part	Description
Observation mode:	Brightfield.
Head: B-510BF:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
B-510ERGO:	Binocular ergonomical head, 30°- 60° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN 4x/0.10 IOS W-PLAN 10x/0.25 IOS W-PLAN 40x/0.65 IOS W-PLAN 100x/1.25 (Oil) All with anti-fungus treatment.

Part	Description
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:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510PH - Phase Contrast Microscope

Advanced routine laboratory microscope for brightfield, darkfield and phase contrast observations with IOS W-PLAN PH objectives and rackless stage.
Especially dedicated to phase contrast observation, the microscope ensures a high image sharpness even with complex specimens.
The high-efficiency ***X-LED³*** makes it reliable for all transmitted light observations.

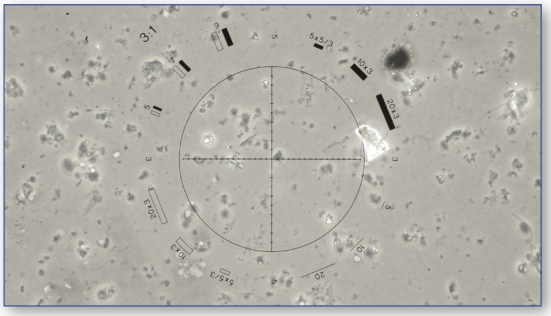


Part	Description
Observation mode:	Brightfield, phase contrast and darkfield (dry).
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN PH 10x/0.25 IOS W-PLAN PH 20x/0.40 IOS W-PLAN PH 40x/0.65 IOS W-PLAN PH 100x/1.25 (Oil) All with anti-fungus treatment.

Part	Description
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:	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510ASB - Asbestos Analysis Microscope

Advanced routine laboratory microscope for brightfield and phase contrast observations with IOS W-PLAN objectives and rackless stage.
Ideal for Asbestos analysis in accordance to international rules with 12.5x eyepieces and Walton & Becket graticule to perform perfect asbestos fibers analysis at a glance. The high-efficiency ***X-LED³*** makes it reliable for all transmitted light observations.

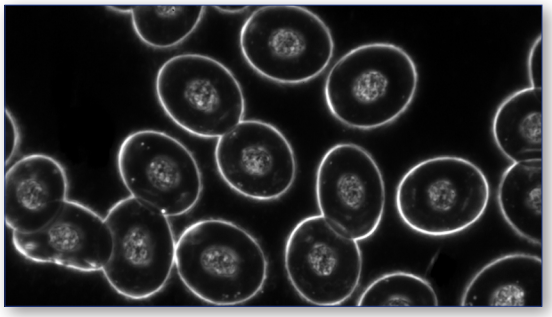


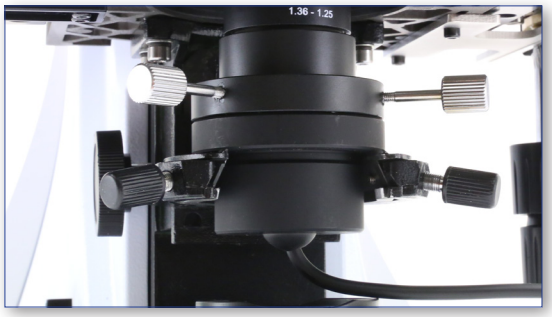
Part	Description
Observation mode:	Brightfield, phase contrast.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and WF12.5x/15 mm with dioptric adjustment, one with Walton & Beckett graticule.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN 4x/0.10 IOS W-PLAN 10x/0.25 IOS W-PLAN PH 40x/0.65 IOS W-PLAN 100x/1.25 (Oil) All with anti-fungus treatment.

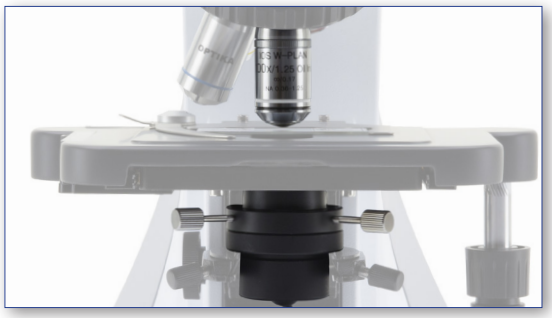
Part	Description
Specimen stage:	Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range.
Focusing:	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
Condenser:	Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable. With 40x phase contrast slider.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510DK - Immersion Darkfield Microscope

Advanced routine laboratory microscope for brightfield and darkfield observations with IOS W-PLAN objectives (including 100x with iris diaphragm) and rackless stage 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.





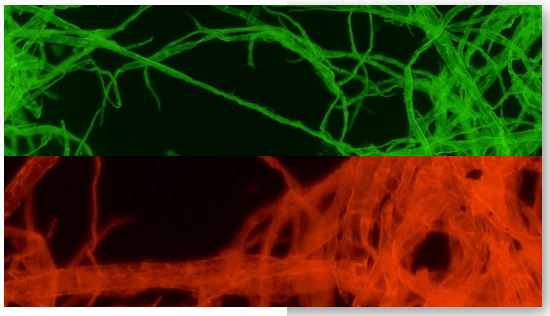


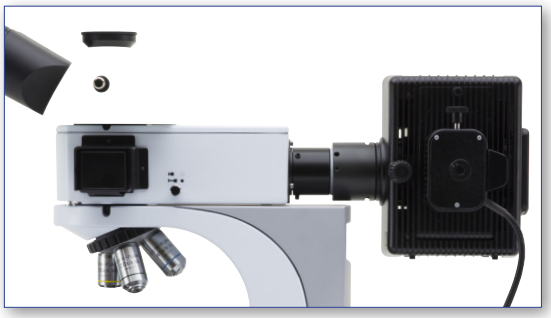
Part	Description
Observation mode:	Brightfield, oil immersion darkfield.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN 4x/0.10 IOS W-PLAN 10x/0.25 IOS W-PLAN 40x/0.65 IOS W-PLAN 100x/1.25 (oil) with iris All with anti-fungus treatment.

Part	Description
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.
Brightfield condenser:	Darkfield N.A. 1.36 (oil immersion) with built-in X-LED³.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510FL - HBO Fluorescence Microscope

Advanced routine laboratory microscope for brightfield and fluorescence observations with Semi-Apo IOS W-PLAN F objectives to enhance the visibility of the sample and increase the overall contrast. 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), yet giving the possibility to combine any other specific filter sets for future upgrade. Transmitted light through the exclusive ***X-LED³*** to ensure great-looking, rich and high-quality specimen view.





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	575LP

Additional filterset (optional)

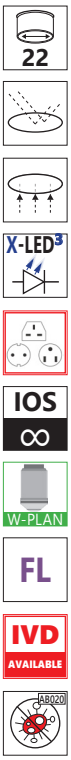
Name	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
V (Violet)	390 - 420	440	455LP
UV	325 - 375	415	435LP

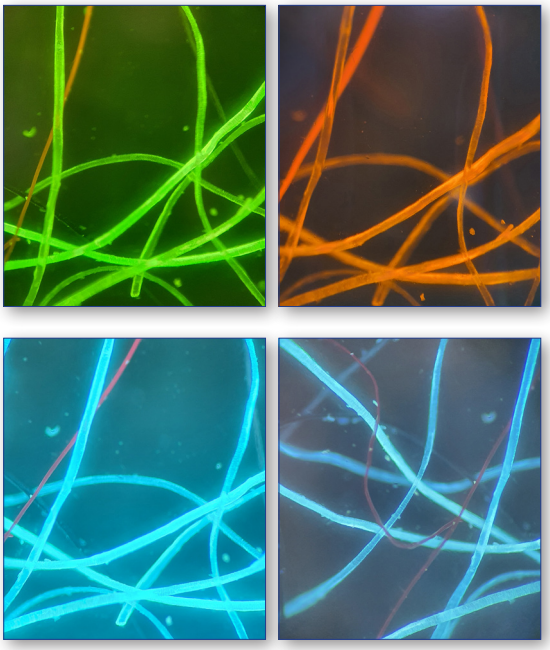
Part	Description
Observation mode:	Brightfield, HBO fluorescence.
Epi-illumination and filter:	HBO 100 W high pressure mercury lamp. 4-position filter holder; blue & green included.
Head:	Trinocular (3-position 100/0, 50/50, 0/100), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN F 4x/0.13 IOS W-PLAN F 10x/0.30 IOS W-PLAN F 20x/0.50 IOS W-PLAN F 40x/0.75 All with anti-fungus treatment.

Part	Description
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:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510LD4 - LED Fluorescence Microscope

Advanced routine fluorescence microscope for transmitted brightfield and fluorescence observations with IOS W-PLAN objectives. The extremely powerful LED Fluorescence Illuminators are combined with corresponding excitation filter sets for the visualization of most fluorochromes. LED fluorescence ensures unparalleled convenience eliminating warm-up/cool-down times and all the inconveniences related lamp replacement and adjustment. Transmitted light through the exclusive ***X-LED³*** to ensure great-looking, rich and high-quality specimen view.





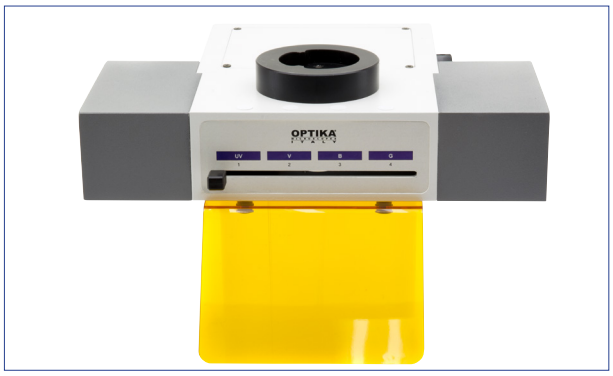
A new milestone achieved in Fluorescence Microscopy

- » Full-modular Fluorescence System
- » Interchangeable LED-Filtersets
- » 4 LED-Filtersets slots
- » 10% higher light intensity than HBO
- » 35% higher light intensity than Metal-Halide
- » Adjustable light intensity
- » The selection of filtersets automatically involves the switching on of the corresponding LEDs
- » Cost-effective, money saving technology
- » Ready for immediate operation
- » Eliminate warm-up/cool-down times
- » Forget lamp replacement & centering

Part	Description
Observation mode:	Brightfield, LED fluorescence.
Epi-illumination and filter:	High-power LED with brightness control. 4-position filter holder; none included.
Head:	Trinocular (3-position 100/0, 50/50, 0/100), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Object.: B-510LD4:	IOS W-PLAN 4x/0.10 IOS W-PLAN 10x/0.25 IOS W-PLAN 40x/0.65 IOS W-PLAN 100x/1.25 (Oil)
B-510LD4-SA:	IOS W-PLAN F 4x/0.13 IOS W-PLAN F 10x/0.30 IOS W-PLAN F 40x/0.75 IOS W-PLAN F 100x/1.3 (Oil) All with anti-fungus treatment.

Part	Description
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:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510LD4 - LED Fluorescence Microscope



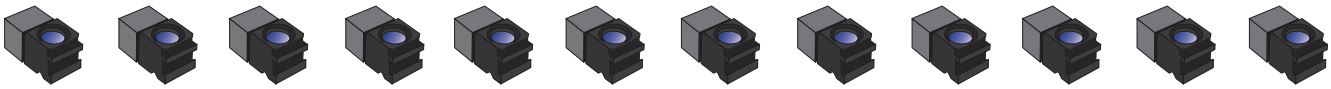
OPTIKA LED Fluorescence attachment is a revolutionary solution.
It consists of a 4-position selector for the use of 4 fluorescent illuminators, called LED Fluorescence Cubes.
Each Cube is composed of a filterset mounted on a filterblock and a high power LED with emission corresponding to the filters installed. In this way the selection of each filter controls the lighting up of the corresponding LED.

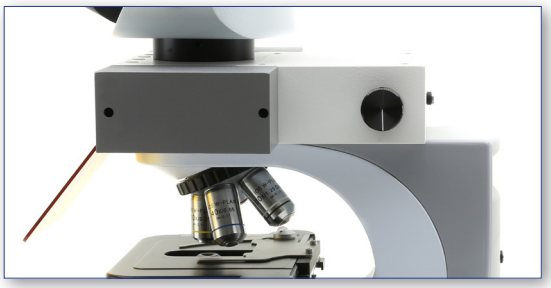
The microscope is supplied without any LED Fluorescence Cube. A selection of 9 types is available, as shown in the table below.

B-510LD4
Trinocular brightfield microscope, 1000x,
IOS W-PLAN objectives

B-510LD4-SA
Trinocular brightfield microscope, 1000x,
IOS W-PLAN F (Semi-Apo) objectives. **For UV Fluorescence**

M-1220 ... M-1228
LED Fluorescence Cubes (LED + Filterset)





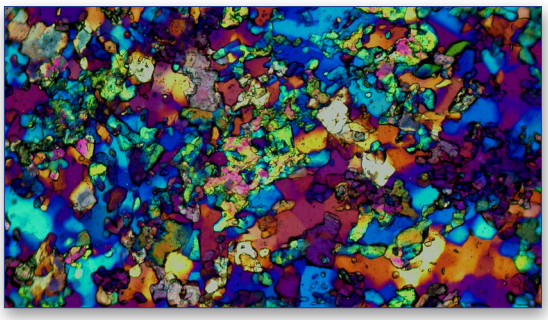
LED Fluorescence Cubes available (LED + Filterset)

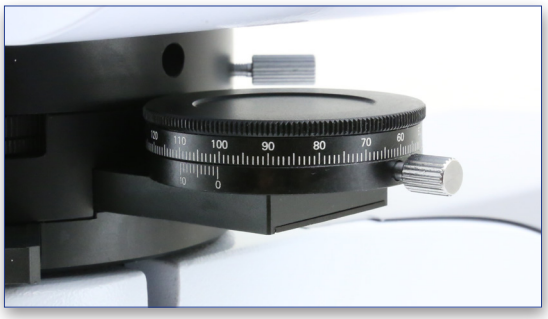
Name	LED emission (nm)	Excitation filter (nm)	Dichroic mirror cut-off (nm)	Emission filter (nm)
M-1220 - Blue	460	455 - 495	500	510LP
M-1220.1 - Blue (pass band)	460	455 - 495	500	518-542
M-1221 - Green	523	510 - 550	570	575LP
M-1221.1 - Green (pass band)	523	510 - 550	570	585-625
M-1222 - Violet	405	390 - 420	440	450LP
M-1223 - UV	365	325 - 375	415	435LP
M-1223.1 - UV (pass band)	365	340 - 390	405	420-470
M-1224 - Red 1 *	623	590 - 650	660	665LP
M-1225 - Red 2 *	623	595 - 645	655	665 - 715
M-1226 - Deep Red *	660	623 - 678	685	690 - 750
M-1227 - Far Red *	740	720 - 760	770	780LP
M-1228 - Amber	590	582 - 603	610	615 - 645

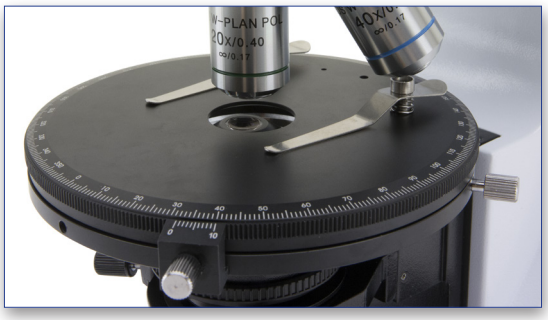
** If the use of a camera is needed, when used for red emission fluorescence wavelengths above 650nm, please order it by specifying with "AR GLASS"*

B-510POL - Polarizing Microscope

Advanced routine laboratory microscope for transmitted light in brightfield and polarized light observations with strain-free IOS W-PLAN POL objectives. 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.





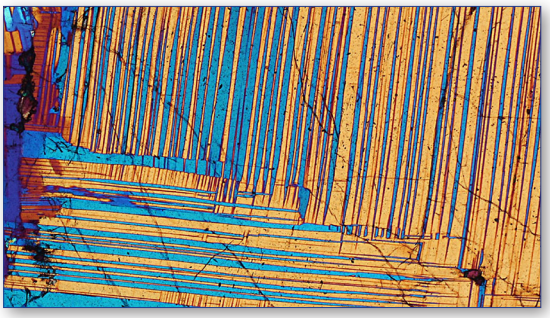


Part	Description
Observation mode:	Brightfield, transmitted polarized light and conoscopy.
Bertrand lens and polarizing attachment:	Swing-out type with centering mechanism for observation in conoscopy/orthoscopy. Rotatable analyzer from 0° to 90° with graduated scale. Tint plates: 1° order red (λ); λ/4; Quartz wedge.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups. One with crosshair.
Nosepiece:	Quadruple revolving nosepiece, rotation on ball bearings. Centering system for each objective.

Part	Description
Objectives (strain-free):	IOS W-PLAN POL 4x/0.10 IOS W-PLAN POL 10x/0.25 IOS W-PLAN POL 20x/0.45 IOS W-PLAN POL 40x/0.65 All with anti-fungus treatment.
Specimen stage:	Rotatable stage with locking mechanism and centering knobs. Vernier scale with accuracy 0.1 mm. Diameter 145 mm. Specimen slide clamps.
Focusing:	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
Condenser:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable. With rotating polarizing filter.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6.300 K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510POL-I - Polarizing Microscope

Advanced routine laboratory microscope for brightfield and polarized light observations in transmitted and incident light with strain-free IOS LWD W-PLAN POL objectives. 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.



Incident/transmitted light Objectives included

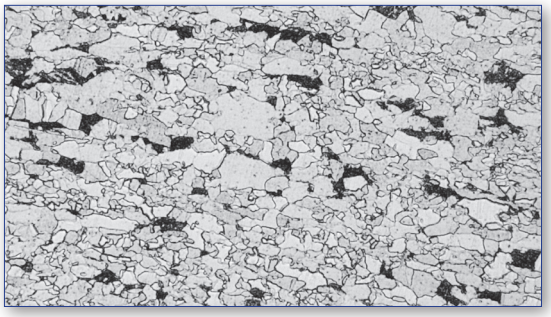
Description
IOS LWD W-PLAN POL 5x/0.12, W.D. 15.5 mm
IOS LWD W-PLAN POL 10x/0.25, W.D. 10.0 mm
IOS LWD W-PLAN POL 20x/0.40, W.D. 5.8 mm
IOS LWD W-PLAN POL 50x/0.75, W.D. 0.32 mm

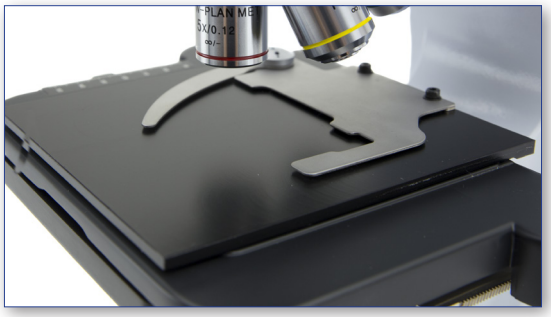
Part	Description
Observation mode:	Brightfield, transmitted/incident polarized light and conoscopy.
Epi-illumination and filters:	X-LED⁸ with white 8 W LED (6.300 K) with brightness control. With polarizer and rotating analyzer for incident illumination, aperture and field diaphragm. With additional filter holder.
Bertrand lens and polarizing attachment:	Swing-out type with centering mechanism for observation in conoscopy/orthoscopy. Rotatable analyzer from 0° to 90° with graduated scale. Tint plates: 1° order red (λ); λ/4; Quartz wedge.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups. One with crosshair.
Nosepiece:	Quadruple revolving nosepiece, rotation on ball bearings. Centering system for each objective.

Part	Description
Objectives (strain-free):	IOS LWD W-PLAN POL 5x/0.12 IOS LWD W-PLAN POL 10x/0.25 IOS LWD W-PLAN POL 20x/0.40 IOS LWD W-PLAN POL 50x/0.75 All with anti-fungus treatment.
Specimen stage:	Rotatable stage with locking mechanism and centering knobs. Vernier scale with accuracy 0.1 mm. Diameter 145 mm. Specimen slide clamps.
Focusing:	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.
Condenser:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable. With rotating polarizing filter.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6.300 K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510MET - Metallurgical Microscope

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



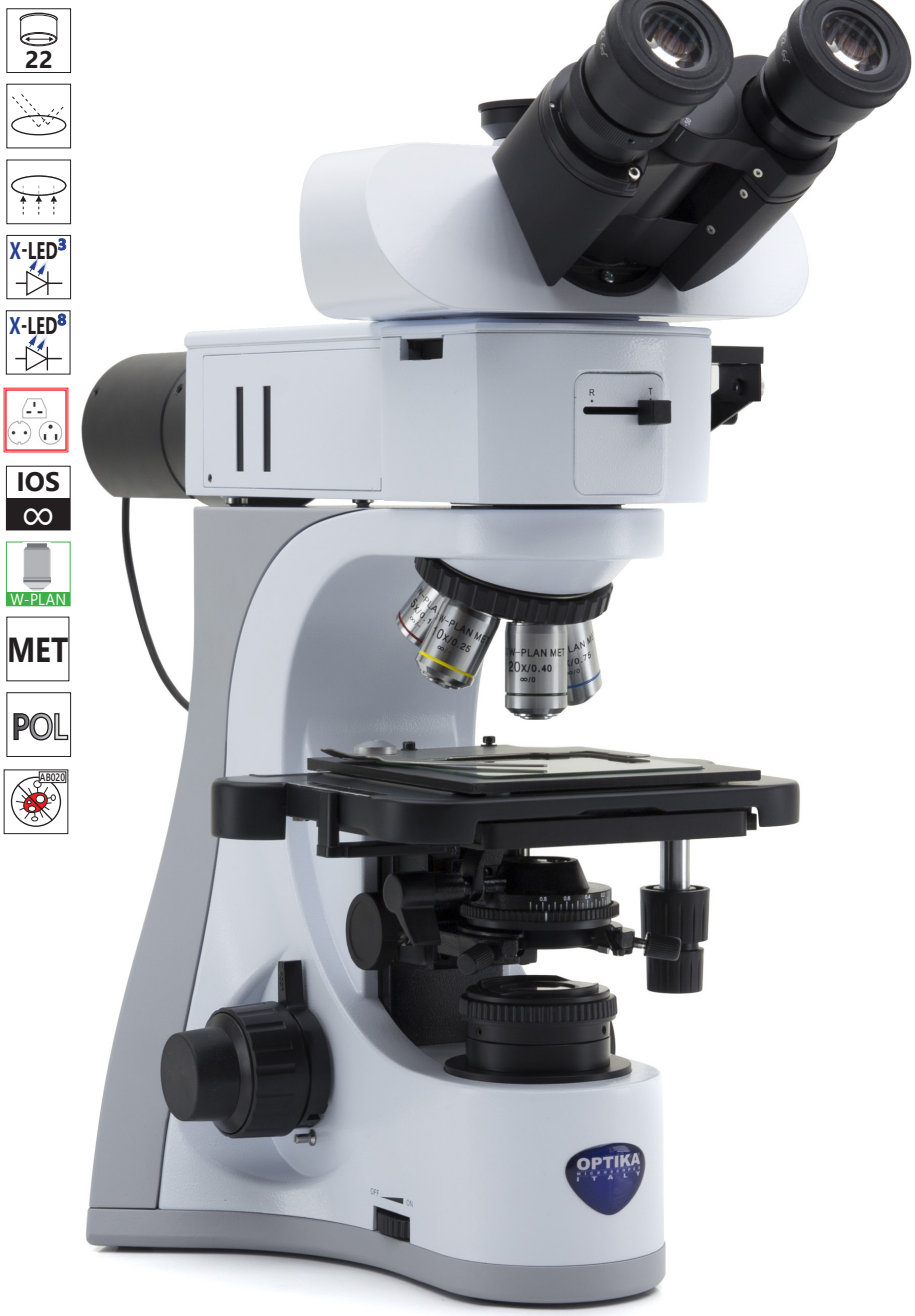


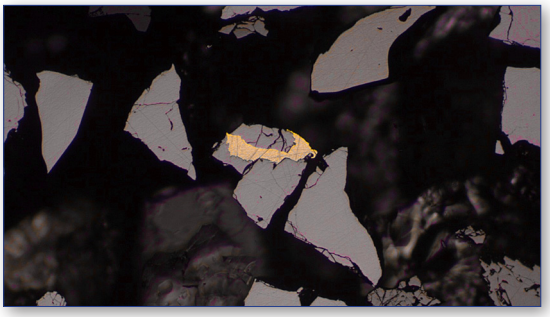
Part	Description
Observation mode:	Brightfield, simple polarized light, oblique illumination on incident light.
Epi-illumination and polarizing filters:	X-LED⁸ with white 8 W LED (6.300 K) with brightness control. With aperture and field diaphragms, and oblique illumination system. With polarizer and analyzer. Multi-plug 100-240Vac/6Vdc external power supply.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.

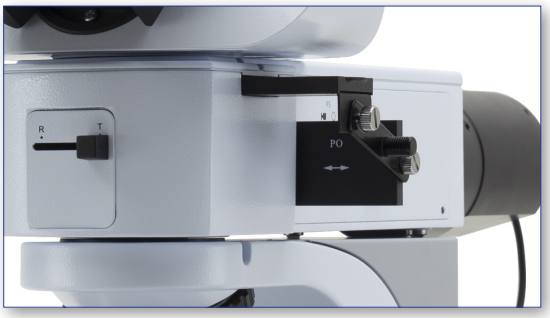
Part	Description
Objectives (strain-free):	IOS W-PLAN MET 5x/0.12 IOS W-PLAN MET 10x/0.25 IOS W-PLAN MET 20x/0.40 IOS W-PLAN MET 50x/0.75 All with anti-fungus treatment.
Specimen stage:	Double layer rackless mechanical stage, 233x147 mm, 78x54 mm X-Y range.
Focusing:	Coaxial coarse (adjustable tension) and fine focusing mechanism with limit stop to prevent the contact between objective and specimen.

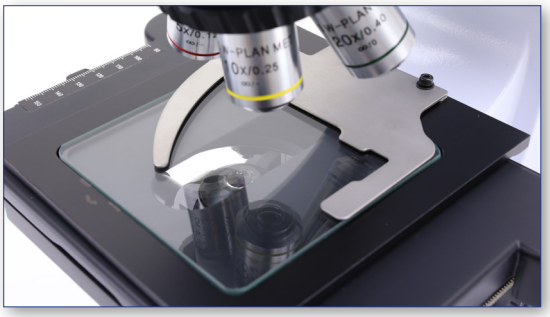
B-510METR - Metallurgical Microscope

Advanced routine laboratory microscope with IOS W-PLAN MET objectives and metallurgical attachment with the exclusive ***X-LED³*** lighting source for both transmitted and incident 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
Observation mode:	Brightfield on transmitted light. Brightfield, simple polarized light, oblique illumination on incident light.
Epi-illumination and polarizing filters:	X-LED⁸ with white 8 W LED (6.300 K) with brightness control. With aperture and field diaphragms, and oblique illumination system. With polarizer and analyzer.
Head:	Trinocular (fixed 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	WF10x/22 mm, high eye-point and with rubber cups.
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:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6.300 K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510 - Discussion Microscopes

Advanced routine laboratory microscope for brightfield observations with IOS W-PLAN objectives and rackless stage.
Ideal for discussion groups and teaching purpose for multiple observers, up to five users simultaneously.
A three-color LED pointer facilitates the indication and identification of the object observed.
The high-efficiency ***X-LED³*** makes it reliable for all transmitted light observations for great-looking, rich and high-quality view.

B-510-2F

B-510-2

B-510-3

B-510-5

Part	Description
Observation mode:	Brightfield
Head:	Trinocular (fixed photo port 50/50), 30° inclined, 360° rotating.
Interpupillary distance:	Adjustable between 50 and 75 mm.
Dioptric adjustment:	On the left eyepiece tube.
Eyepieces:	Main head: WF10x/22 mm, high eye-point and with rubber cups. Additional head(s): WF10x/20 mm, high eye-point.
Nosepiece:	Quintuple revolving nosepiece, rotation on ball bearings.
Objectives:	IOS W-PLAN 4x/0.10 IOS W-PLAN 10x/0.25 IOS W-PLAN 40x/0.65 IOS W-PLAN 100x/1.25 (Oil) All with anti-fungus treatment.

Part	Description
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:	Swing-out N.A. 0.2/0.9, with iris diaphragm, focusable and centerable.
Transmitted illumination (Full Koehler type):	X-LED³ with white 3.6 W LED (6,300K) with brightness control. Multi-plug 100-240Vac/6Vdc external power supply.

B-510 Series - Comparison chart

Model	Head	Eyepieces	Nosepiece	Attachment	Objectives
B-510BF	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	-	IOS W-PLAN 4x, 10x, 40x, 100x (oil)
B-510ERGO	Binocular ergonomical, 30°- 60° inclined 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	-	IOS W-PLAN 4x, 10x, 40x, 100x (oil)
B-510PH	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	-	IOS W-PLAN PH 10x, 20x, 40x, 100x (oil)
B-510ASB	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point WF12.5x/15mm w/W&B reticle	Quintuple, reversed	-	IOS W-PLAN 4x, 10x, 40xPH, 100x (oil)
B-510DK	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	-	IOS W-PLAN 4x, 10x, 40x, 100x with iris diaphragm (oil)
B-510FL	Trinocular (100/0, 50/50, 0/100), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Epi-Florescence attachment, with 4-position filterset slider. Equipped with Blue (FITC) and Green (TRITC) filtersets	IOS W-PLAN F 4x, 10x, 20x, 40x (oil)
B-510LD4	Trinocular (3-position 100/0, 50/50, 0/100), 30° inclined, 360° rotating.	WF10x/22mm, high eye-point	Quintuple, reversed	Epi-Florescence attachment, with 3-position filterset slider. Equipped with Blue filterset (FITC)	**B-510LD4**: IOS W-PLAN 4x, 10x, 40x, 100x (oil) **B-510LD4-SA**: IOS W-PLAN F 4x, 10x, 40x, 100x (oil)
B-510POL	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quadruple, reversed. Objective positions centrable.	Swing-out Bertrand lens with centering mechanism for observation in conoscopy/orthoscopy. Rotatable analyzer from 0° to 90° with graduated scale. Tint plates: 1° order red (λ); λ/4; Quartz wedge	IOS W-PLAN POL 4x, 10x, 20x, 40x
B-510POL-I	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quadruple, reversed. Objective positions centrable.	Incident light attachment with Polarizer for incident illumination, with Aperture & Field diaphragms and additional filter holder. Swing-out Bertrand lens with centering mechanism for observation in conoscopy/orthoscopy. Rotatable analyzer from 0° to 90° with graduated scale. Tint plates: 1° order red (λ); λ/4; Quartz wedge	IOS LWD W-PLAN POL 5x, 10x, 20x, 50x
B-510MET	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Incident light attachment with Polarizer and rotating Analyzer for incident illumination, with Aperture & Field diaphragms and 2 additional filter holders. Oblique illumination	IOS W-PLAN MET 5x, 10x, 20x, 50x
B-510METR	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Incident light attachment with Polarizer and rotating Analyzer for incident illumination, with Aperture & Field diaphragms and 2 additional filter holders; Epi/Transmitted light selector. Oblique illumination	IOS W-PLAN MET 5x, 10x, 20x, 50x
B-510-2F	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Discussion bridge for 2 observers , Face-to-Face type. 2nd binocular head with WF10x/20mm eyepieces. Equipped with RGB discussion pointer	IOS W-PLAN 4x, 10x, 40x, 100x (oil)
B-510-2	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Discussion bridge for 2 observers , Side-by-Side type. 2nd binocular head with WF10x/20mm eyepieces. Equipped with RGB discussion pointer	IOS W-PLAN 4x, 10x, 40x, 100x (oil)
B-510-3	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Discussion bridge for 3 observers. Additional binocular heads with WF10x/20mm eyepieces. Equipped with RGB discussion pointer	IOS W-PLAN 4x, 10x, 40x, 100x (oil)
B-510-5	Trinocular (50/50), 30° inclined, 360° rotating	WF10x/22mm, high eye-point	Quintuple, reversed	Discussion bridge for 5 observers. Additional binocular heads with WF10x/20mm eyepieces. Equipped with RGB discussion pointer	IOS W-PLAN 4x, 10x, 40x, 100x (oil)

B-510 Series - Comparison chart

Stage	Focusing	Condenser	Incident Illumination	Transmitted Illumination
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Phase condenser (10x/20x, 40x, 100x) with darkfield (dry) and brightfield	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Abbe N.A. 1.25, with objective-coded iris diaphragm, focusable and centerable. With 40x phase contrast slider.	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system. Additional darkfield condenser, N.A. 1.36, built-in X-LED³	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	High Pressure HBO 100 W mercury bulb	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	High-power blue LED with brightness control	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Rotating stage with locking mechanism and centering knobs. Vernier scale with accuracy 0.1 mm. Diameter 145 mm; Specimen slide clamps	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system. With rotating polarizing filter	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Rotating stage with locking mechanism and centering knobs. Vernier scale with accuracy 0.1 mm. Diameter 145 mm; Specimen slide clamps	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system. With rotating polarizing filter	X-LED⁸ with white 8 W LED (6,300K), brightness control	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless; with metal plate for metallurgical samples	Coaxial coarse and fine, limit stop, adjustable tension	-	X-LED⁸ with white 8 W LED (6,300K), brightness control	-
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless; with glass plate for metallurgical samples	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	X-LED⁸ with white 8 W LED (6,300K), brightness control	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.
Double layer, 233x147 mm, moving range 78x54 mm, X-axis rackless	Coaxial coarse and fine, limit stop, adjustable tension	Swing-out type, sliding-in, N.A. 0.2/0.9, with centering system	-	X-LED³ with white 3.6 W LED (6,300K), brightness control. Full Koehler type.

B-510 Series - Accessories

Eyecups & Eyepieces

M-601 WF15x/16 eyepiece, high eyepoint
M-690 Eyecups (pair)
M-780 PL10x/22 eyepiece, high eyepoint, with rubber cup
M-781 PL10x/22 micrometric eyepiece, high eyepoint, with rubber cup
AA-01 12.5x/18 eyepieces (pair), high eyepoint, focusable, W&B reticle

Objectives

IOS W-PLAN

M-1049 IOS W-PLAN objective 2x/0.05
M-1125 IOS W-PLAN objective 4x/0.10
M-1126 IOS W-PLAN objective 10x/0.25
M-1127 IOS W-PLAN objective 20x/0.40
M-1128 IOS W-PLAN objective 40x/0.65
M-634.1 IOS W-PLAN objective 50x/0.95 (oil)
M-1129 IOS W-PLAN objective 60x/0.80
M-1130 IOS W-PLAN objective 100x/1.25 (oil)
M-1130.1 IOS W-PLAN objective 100x/1.25OI - (oil) with iris for DF

IOS W-PLAN F

M-1060 IOS W-PLAN F objective 4x/0.13
M-1061 IOS W-PLAN F objective 10x/0.30
M-1062 IOS W-PLAN F objective 20x/0.50
M-1063 IOS W-PLAN F objective 40x/0.75
M-1064 IOS W-PLAN F objective 100x/1.30 (oil)

IOS W-PLAN MET

M-336 IOS W-PLAN MET objective 5x/0.12
M-338 IOS W-PLAN MET objective 10x/0.25
M-339 IOS W-PLAN MET objective 20x/0.40
M-335 IOS W-PLAN MET objective 50x/0.75
M-698.2 IOS W-PLAN MET objective 100x/0.80 (dry)

IOS W-PLAN PH

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-1123.N IOS W-PLAN PH objective 100x/1.25 (oil)

IOS W-PLAN POL

M-1131 IOS W-PLAN POL objective 4x/0.10
M-1132 IOS W-PLAN POL objective 10x/0.25
M-1133 IOS W-PLAN POL objective 20x/0.45
M-1134 IOS W-PLAN POL objective 40x/0.65
M-1135 IOS W-PLAN POL objective 60x/0.80
M-1136 IOS LWD W-PLAN POL objective 5x/0.12
M-1137 IOS LWD W-PLAN POL objective 10x/0.25
M-1138 IOS LWD W-PLAN POL objective 20x/0.40
M-1139 IOS LWD W-PLAN POL objective 50x/0.75

M-1037 - Gout analysis kit

M-635 - Heating stage (on newly purchased microscopes, for 233x147mm), multiplug

B-510 Series - Accessories

Stages
M-175.1 Rotating stage for polarising set (for 233x147mm rackless stage) (except for B-510PH, B-510ASB and B-510DK)
M-635 Heating stage (on newly purchased microscopes, for 233x147mm), multiplug

Condensers & Filters
M-181 PH set - 10x, 20x, 40x, 100x IOS W-PLAN PH obj. & BF/DF/PH condenser
M-185 Darkfield condenser for dry objectives (except for B-510DK, B-510MET and B-510METR)
M-636 Polarising set (filters only) (except for B-510POL & B-510POL-I)
M-637 Fluorescence filter set V (filterblock not needed) (only for B-510FL)
M-638 Fluorescence filter set UV-DAPI (filterblock not needed) (only for B-510FL)
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-1220 Blue LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1220.1 Blue (pass band) LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1221 Green LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1221.1 Green (pass band) LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1222 Violet LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1223 UV LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1223.1 UV (pass band) LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)
M-1224 Red 1 LED Fluorescence Cube (LED+Filterset), (only for B-510LD4) *
M-1225 Red 2 LED Fluorescence Cube (LED+Filterset), (only for B-510LD4) *
M-1226 Deep Red LED Fluorescence Cube (LED+Filterset), (only for B-510LD4) *
M-1227 Far Red LED Fluorescence Cube (LED+Filterset), (only for B-510LD4) *
M-1228 Amber LED Fluorescence Cube (LED+Filterset), (only for B-510LD4)

Camera Adapters
M-113.1 Ring adapter, 30mm (for monocular and binocular microscopes)
M-115 0.35x C-Mount projection lens
M-114 0.5x C-Mount projection lens
M-118 0.75x C-Mount projection lens
M-173 C-Mount projection lens for APS-C/full frame reflex cameras (trino)
M-620 0.35x focusable C-Mount adapter (biological microscopes)
M-620.1 0.5x focusable C-Mount adapter (biological microscopes)
M-620.2 0.65x focusable C-Mount adapter (biological microscopes)
M-620.3 1x focusable C-Mount adapter (biological & stereomicroscopes)
M-699 Universal adapter for C-Mount projection lens (trino)

Miscellaneous
15008 Immersion oil, 10ml
15009 Immersion oil, 100ml
15104 Cleaning kit
AA-02 HSE-NPL Mark II phase contrast test slide, with certification (only for B-510ASB)
DC-003 TNT dust cover, medium, 600(l)x550(h) mm
M-005 Micrometric slide, 26x76mm, with 2 scales (1mm/100 & 10mm/100)
M-069 Solar charger (except for B-510MET, B-510METR and B-510POL-I)
M-151 HBO 100W high-pressure mercury bulb for fluorescence (only for B-510FL)
M-151.1 HBO 100W high-pressure mercury bulb for fluorescence (OSRAM) (only for B-510FL)
M-1004.N Centering telescope, 30mm diameter (except for B-510MET, B-510METR, B-510POL and B-510POL-I)
M-1037 Gout analysis kit (only for B-510BF, B-510ERGO and B-510PH)
VP-510 IQ/OQ/PQ manual for B-510 series
AB-020 Antibacterial surface treatment, only for newly purchased microscope

** If the use of a camera is needed, when used for red emission fluorescence wavelengths above 650nm, please order it by specifying with "AR GLASS"*

How to connect the cameras to our microscopes.
Please refer to the Adapter reference list on Digital section.

15104 - Cleaning kit
It cleans glass quickly and effectively,
without leaving residue or odor.
Ideal for precision lens or prism cleaning.

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^3).
Charging models: with solar panel (12h),
with external USB power supply (2.5h)

v 6.6.0 - OPTIKA reserves the right to make corrections, modifications, enhancements, improvements and other changes to its products at any time without notice.

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