

DM Series

Digital microscopes



DM Series

The OPTIKA digital microscopes DM are equipped with a camera which is integrated in the head of the microscope, as well as the traditional characteristics of quality and robustness.

The entire DM series, from models dedicated to teaching to those intended for laboratory use, is equipped with "plug & play" software. This series is the ideal solution for capturing images and video and transfer them to a PC.

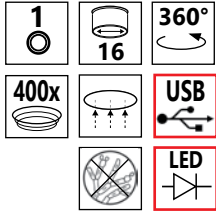
DM-5	Digital Monocular microscope 480Kpixels.
DM-5UP	Digital Monocular microscope 480Kpixels, USB powered.
B-150DM	Digital monocular microscope 400x, 1.3Mp, double layer stage.
B-150DMR	Digital monocular microscope 400x, 1.3Mp, double layer stage, with rechargeable batteries.
B-150DB	Digital binocular microscope 1000x, 3.2Mp, double layer stage.
B-150DBR	Digital binocular microscope 1000x, 3.2Mp, double layer stage, with rechargeable batteries
B-190TB	Upright digital microscope, achromatic objectives. With Tablet PC.
B-290TB	Upright digital microscope, E-PLAN objectives, belt-drive stage. With Tablet PC.
SZM-D	Digital stereozoom microscope 7x...45x, halogen incident & transmitted illumination, with 1.3Mpixels built-in camera



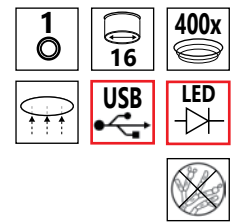
DM Series - Models



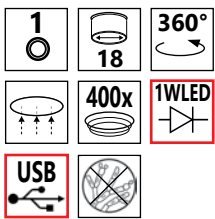
DM-5



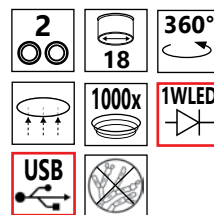
DM-5UP



B-150DM



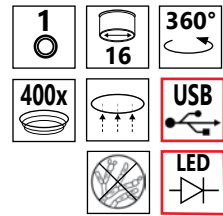
B-150DB



DM Series - DM-5



DM-5



The DM-5 is the "entry level" model of the DM series and it is ideal for primary schools.

Its ease of use combined with high quality construction and first choice optical system, make the study of biology a pleasant experience.

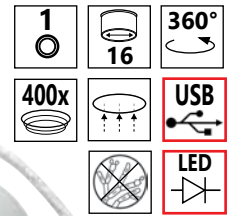
The DM-5 is supplied with everything needed for immediate use without the need for additional accessories.

DM Series - DM-5

Head:	Digital, monocular, 360° rotating, 45° inclined
Eyepiece:	WF10x/16mm
Nosepiece:	Triple, reversed
Objectives:	Achromatic 4x (0.10), 10x (0.25), 40x (0.65)
Stage:	Rotating round stage dia. 90mm; moving range: 5mm; slide clips
Focusing:	Coarse and fine with different axis
Illumination:	White LED, non-rechargeable, with brightness control
Digital camera resolution:	640x480
Output:	2.0 USB port
Software:	OPMIAS (Optika Micro Image Analysis Software), for Windows XP/Vista/Win7, Win8, Win10, 32-64 bit
Packing:	Carton box with inner foam



DM-5



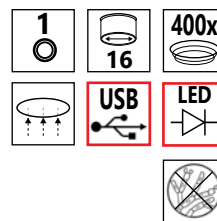
DM Series - DM-5UP

Monocular digital microscope

Same as DM-5, but with illuminator powered by your PC through USB connection.



DM-5UP



USB POWERED
OR EXTERNALLY POWERED



DM Series - B-150DM / B-150DMR

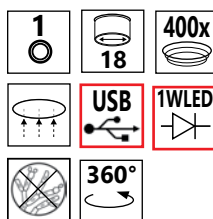
The microscopes B-150DM and B-150DB are built to meet the needs of secondary schools.

The integration of a digital camera, the quality of the optics and mechanics, and the rich equipment of these microscopes make them the best solution for the interactive training.

B-150DM and B-150BM are provided with everything necessary to allow immediate use without the need for additional accessories.



B-150DM



Head:	Digital, Monocular, 360° rotating, 45° inclined
Eyepiece:	WF10X/18mm
Nosepiece:	Quadruple
Objectives:	Achromatic 4x (0.10), 10x (0.25), 40x (0.65).
Working stage:	Double layer with mechanical sliding stage, 125x115mm, moving range: 50x30mm
Condenser:	1.25 N.A. Abbe type
Focusing system:	Coaxial coarse and fine, with focusing stop mechanism
Illumination:	1W white LED, non-rechargeable, with brightness control
Digital camera resolution:	1280x1024 pixels (1.3Mp)
Output:	2.0 USB port
Software:	OPTIKA Vision Lite for Windows XP/Vista, Win7, Win8, Win10, 32-64 bit
Packing:	Carton box with inner foam

DM Series - B-150DB / B-150DBR

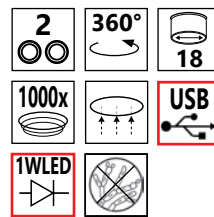
Head:	Digital, Binocular, 360° rotating, 30° inclined
Eyepiece:	WF10X/18mm
Nosepiece:	Quadruple
Objectives:	Achromatic 4x (0.10), 10x (0.25), 40x (0.65), 100x (1.25).
Working stage:	Double layer with mechanical sliding stage, 125x115mm, mov. range 50x30mm
Condenser:	1.25 N.A. Abbe type
Focusing system:	Coaxial coarse and fine, with focusing stop mechanism
Illumination:	1W white LED, non-rechargeable, with brightness control
Digital camera resolution:	2048x1536 pixels (3.14Mp)
Output:	2.0 USB port
Software:	OPTIKA Vision Lite for Windows XP/Vista, Win7, Win8, Win10, 32-64 bit
Packing:	Carton box with inner foam

R - Rechargeable battery

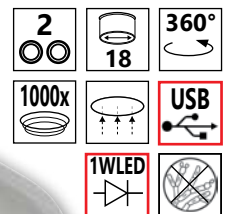
B-150DMR and B-150DBR comes with an internal rechargeable battery for use on field.



B-150DB



B-150DBR



DM Series - Technical specifications

	DM-5	B-150DM	B-150DB
Resolution	640x480 pixels	1280x1024 pixels (1.3Mp)	2048x1536 pixels (3.14Mp)
Sensor	1/4" CMOS	1/3,2" CMOS	1/2,5" CMOS
Pixel size	7,9x7,9 µm	2,8x2,8 µm	2,2x2,2 µm
Resolution & Frame Rate	640x480 - 25 fps	1280x1024 - 15 fps	2048x1536 - 4 fps
		640x480 - 30 fps	1280x1024 - 8 fps
			640x480 - 30 fps
Sensitivity	2.0 V/Lux-sec	1.0 V/Lux-sec	1.0 V/Lux-sec
White Balance	Auto / Manual	Auto / Manual	Auto / Manual
S/N Ratio	≥ 50 dB	≥ 42 dB	≥ 40 dB
Dynamic Range	≥ 60 dB	≥ 71 dB	≥ 66 dB
Digital Port	USB 2.0	USB 2.0	USB 2.0
Imaging Software	OPMIAS	OPTIKA Vision Lite	OPTIKA Vision Lite
System Requirements	Operating system: Windows XP, Vista, Win7, Win8, Win10, 32-64 bit		

DM Series - Accessories

DM-5 - DM5UP

- M-044 Eyepiece WF10x/16mm.
- M-727 Achromatic objective 4x/0,10.
- M-728 Achromatic objective 10x/0,25.
- M-729 Achromatic objective 40x/0,65.
- M-030 Dust cover type 1.

B-150DM - B-150DB - B-150DMR - B-150DBR

- M-001 Eyepiece H5x.
- M-002.1 Eyepiece WF10x/18mm.
- M-003 Eyepiece WF16x/12mm.
- M-004 Eyepiece with micrometer WF10x/18mm.
- M-137 Objective Achromatic 4x/0,10.
- M-138 Objective Achromatic 10x/0,25.
- M-139 Objective Achromatic 20x/0,40.
- M-141 Objective Achromatic 40x/0,65.
- M-142 Objective Achromatic 60x/0,80.
- M-143 Objective Achromatic 100x/1,25 (Oil).
- M-114 C-Mount adapter for 1/2" sensor.
- M-116 C-Mount adapter for 2/3" sensor.
- M-031 Dust cover type 3.
- M-173 Photo adapter for APS-C and Full Frame Reflex cameras.

15104 - Lens cleaner, 50ml

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



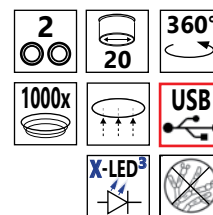
How to connect the cameras to our microscopes.
Please refer to the Adapter reference list on Digital section.

DM Series - B-190TB - B-290TB - BEYOND DIGITAL

The latest Digital Microscopes with Tablet PC from Optika open new microscopy horizons. Our Microscopes combine high-end optics with innovative Digital Technology for microscopic imaging.



B-290TB



Optical system:

The optical system has been developed for demanding users; it consists of high quality components which guarantee a high image contrast and an excellent optical resolution. The optical components have been designed and treated with special techniques to prevent the formation of moulds and fungi.

Head:

Binocular version available.

The heads are equipped with interpupillary distance control (48-75 mm) as well as with dioptic compensation. All heads are 360° rotatable and 30° inclined.

Stand:

The stand has a modern and ergonomic design. It is easy to carry the microscope thanks to the large opening behind the revolving nosepiece, to be used as a handle. The opening allows the user to see clearly the objectives and the samples, as requested in discussion groups.

Mechanics:

The moving parts are made by means of machine tools with computerized numerical control reducing manufacturing tolerance and increasing the reliability of the instrument. The strict controls on materials and production processes are optimized through the procedures established by ISO 9001:2008 quality system.

Illumination:

B-190TB:

X-LED² type with white LED; light intensity control using a knob on left side of the frame.

LED power 3W, comparable to a 30-35W halogen bulb.

B-290TB:

X-LED³ type with white LED; light intensity control using a knob on left side of the frame.

LED power 3.6W, comparable to a 50W halogen bulb.

Camera:

Digital camera resolution: 3.14 MegaPixels

Signal output: USB 2.0 - Sensor size: 1/2.5"

Sensor technology: CMOS - Image format: 4/3

Full Image Size: 2048x1536. NO driver (microsoft driver).

Capture features: continuous auto exposure, image size, image capture, compressed video capture.

Control parameters: brightness, gain, exposure time, colors, color enhancement.

Tablet PC:

Equipped with Windows 8.1 operating system.

Included: Image Analysis software Optika Vision Lite, full screen function is also included for a wider camera Live View.

2GB standard memory. 16+16GB capacity flash memory.

8.9" screen size. Tablet PC with OPTIKA detachable system.

DM Series - B-190TB

The result of a perfect fusion between years of experience in the microscopy field and a refined design study.

Quality, Reliability and Innovation: this is **B-190TB**.

Head:	Binocular Digital observation head, inclined 30° and rotatable 360°.
Eyepiece:	Widefield eyepieces WF10X/18 with field number 18mm.
Nosepiece:	Quadruple revolving nosepiece, rotation on ball bearings.
Objectives:	Achromatic DIN 4x (0.10), 10x (0.25), 40x (0.65), 100X (1.25).
Working stage:	Double layer with mechanical sliding stage, size 125x115mm, X-Y movement range 70x30, specimen holder for one slide.
Condenser:	Abbe condenser, N.A. 1,25 precentered
Focusing system:	Coaxial coarse and fine, with focusing stop mechanism
Illumination:	Light source type X-LED ² with white LED; light intensity control using a knob on left side of the frame. LED power 3W, comparable to a 30-35W halogen bulb.

**Easily detachable
from the microscope**



Simultaneous data and power feed

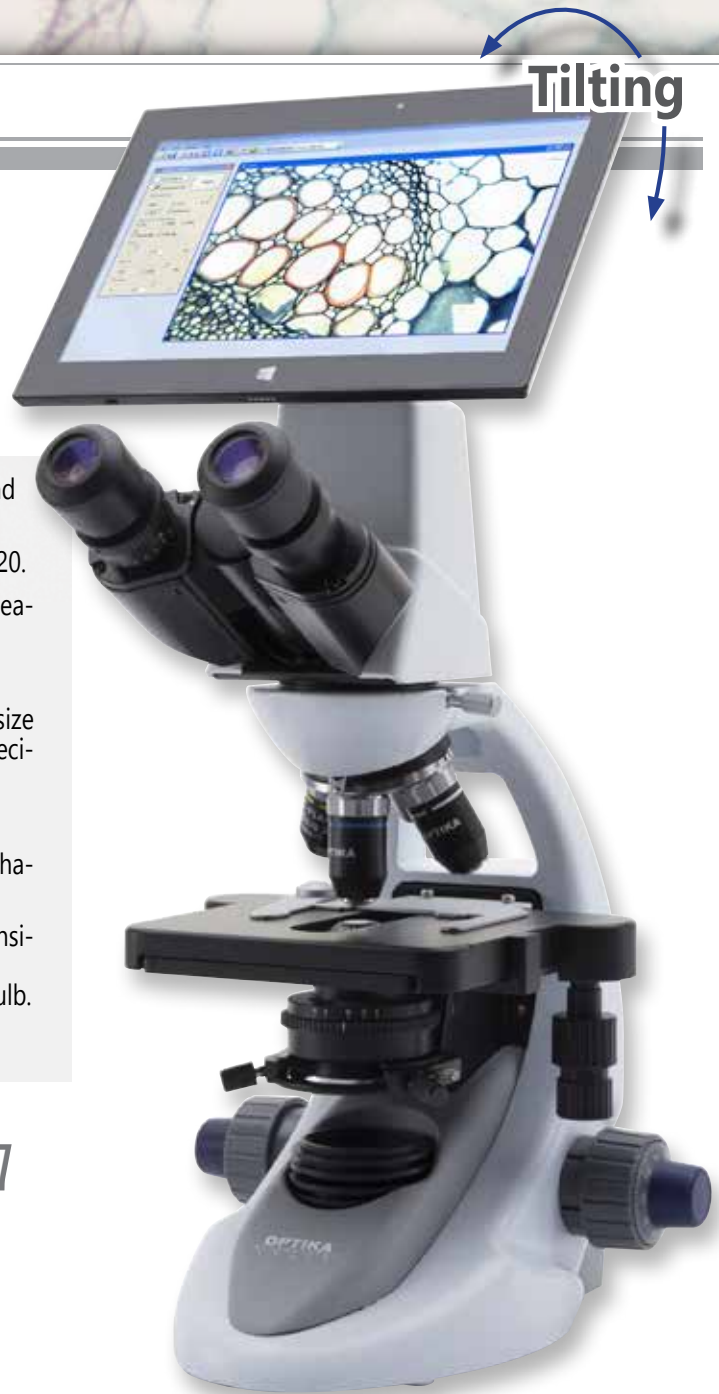


DM Series - B-290TB

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

B-290TB is suitable for routine microscopy and has an ergonomic design for comfortable long-term use.

Head:	Binocular Digital observation head, inclined 30° and rotatable 360°.
Eyepiece:	Widefield eyepieces WF10X/20 with field number 20.
Nosepiece:	Quadruple revolving nosepiece, rotation on ball bearings.
Objectives:	E-Plan 4x (0.10), 10x (0.25), 40x (0.65), 100X (1.25).
Working stage:	Double layer with mechanical sliding stage, size 150x133mm, X-Y movement range 75x50mm, specimen holder for one slide. Belt drive in X direction.
Condenser:	Abbe condenser, N.A. 1,25 precentered
Focusing system:	Coaxial coarse and fine, with focusing stop mechanism
Illumination:	Light source X-LED ³ type with white LED; light intensity control using a knob on left side of the frame. LED power 3.6W, comparable to a 50W halogen bulb.



Simultaneous data and power feed



**360°
Rotating**



DM Series - B-190TB/B-290TB

Tablet specifications

OPERATING SYSTEM

OS Windows 8.1

PROCESSOR AND CHIPSET

Processor manufacturer Intel
 Processor Type Bay Trail
 Model Z3735F
 Speed 1,83 GHz
 Processor Core Quad core

MEMORY

Standard Memory 2 GB
 Memory Technology LPDDR3
 Memory Card Reader Yes
 Supported memory microSD

STORAGE

Capacity flash memory 16+ 16 GB

DISPLAY AND GRAPHICS

Screen Size 8.9"
 Screen Type LCD color TFT
 Screen Mode Full HD
 Screen Resolution 1920 x 1200
 Backlight technology LED
 Touchscreen Yes
 Multi-touch screen Yes
 Graphics Controller Manufacturer Intel
 Graphics Controller Model HD Graphics
 Graphics Memory Technology LPDDR3
 Graphics Memory Accessibility Shared

NETWORK & COMMUNICATION

LAN wireless Yes
 Wireless LAN standard IEEE 802.11a/g/n
 Bluetooth Yes
 Standard Bluetooth Bluetooth 4.0

INTERFACES / PORTS

HDMI Yes

INPUT DEVICES

Keyboard Type Touchscreen

BUILT-IN DEVICES

Microphone Yes

SOFTWARE

Operating System Windows 8.1 32-bit
 Software Microsoft Office (1 year)
 Image Analysis software OPTIKA VISION LITE

BATTERY INFORMATION

Number of Cells 2-cell
 Battery Chemistry Lithium ION
 Battery Capacity 6000 mAh

POWER DESCRIPTION

Maximum Power Supply Wattage 10 W

WEIGHT AND DIMENSIONS

Thickness 9,5 mm
 Width 220 mm
 Height 157 mm
 Weight (Approximate) 477 g

DM Series - Accessories

B-190TB

M-001 Eyepiece H5x.
 M-002.1 Eyepiece WF10x/18mm.
 M-003 Eyepiece WF16x/12mm.
 M-004 Eyepiece with micrometer WF10x/18mm.
 M-008 Eyepiece with pointer WF10x/18mm.
 M-137 Objective Achromatic 4x/0,10.
 M-138 Objective Achromatic 10x/0,25.
 M-139 Objective Achromatic 20x/0,40.
 M-141 Objective Achromatic 40x/0,65.
 M-142 Objective Achromatic 60x/0,80.
 M-143 Objective Achromatic 100x/1,25 (Oil).

M-190 Polarising set (filters only).
 M-031 Dust cover type 3.
 M-069 Solar battery pack.
 M-974 Blue filter, 32 mm diameter.
 M-976 Green filter, 32 mm diameter.
 M-978 Yellow filter, 32 mm diameter.
 M-988 Frosted glass filter, 32 mm diameter.
 15008 OPTIKA immersion oil 10ml.

DM Series - B-190TB/B-290TB

Camera specifications

CAMERA SPECIFICATIONS

Digital camera resolution	3.14 MegaPixels
Analog camera resolution	NO
Signal output	USB 2.0
Audio Signal	NO
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) 30FPS (640x480)
Sensitivity	0,53 V/Lux-second (550 nm)
Signal / noise ratio	40 dB
Dynamic range	66.5 dB
Max Exposure time	1,5 sec
ADC conversion	12 BIT
Color Depth	8 BIT
On camera IR Filter	680 nm
Automatic White Balance	Auto - Man
Automatic Gain Control	Auto - Man
Automatic Back light control	Auto - Man
Exposure control	Auto - Man

ACCESSORIES

Calibration Slide	YES
-------------------	-----

SOFTWARE SPECIFICATIONS

Supplied Software:

Optika Vision Lite (full screen function is also included for a wider camera Live View)

Driver type:

No driver (microsoft driver) required

Capture features:

Continuous auto exposure, image size, image capture, compressed video capture.

Control parameters:

Brightness, gain, exposure time, colors, color enhancement.

GENERAL SPECIFICATIONS

Working temperature	+0 up to +60°C
Storage temperature	-20 up to +70°C
Relative Humidity	45% up to 85%

DM Series - Accessories

B-290TB

M-160	Eyepiece WF10x/20mm.
M-161	Eyepiece EW15x/16mm.
M-162	Eyepiece WF20x/10mm.
M-163	Micrometer eyepiece WF10x/20mm.
M-164	Objective 4x/0,10 E-PLAN.
M-165	Objective 10x/0,25 E-PLAN.
M-166	Objective 20x/0,40 E-PLAN.
M-167	Objective 40x/0,65 E-PLAN.
M-168	Objective 60x/0,80 E-PLAN.
M-169	Objective 100x/1,25 E-PLAN (Oil).

M-174	Polarizing set, filters only (for B-290 series).
M-175	Rotating table for polarizing set.
M-069	Solar battery pack.
M-031	Dust cover type 3.
M-666.290 15008	Heating stage, with digital temperature controller B-290 series. OPTIKA immersion oil 10ml.



DM Series - SZM-D

The stereomicroscopes of the SZM series are instruments specifically designed for laboratory and industry applications. Their optical and mechanical qualities place them at the top of that sought-after category of appliances and the price/quality ratio is exceptionally good.

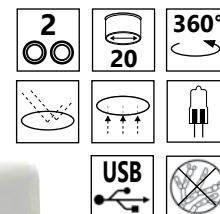
Sharing the same optical system consisting of binocular and trinocular heads with zoom objectives, the four models of the SZM series find their proper application wherever professional instruments are required at a particularly contained cost.

The numerous accessories provide an ample choice of possible configurations and extend the flexible use of the instruments.

SZM-D stereozoom microscope is our best option when an ease of use and a good quality for the image are required.

By using the built-in camera with its USB port the connection with the pc will be simple and quick.

SZM-D



DM Series - SZM-D Model Technical specifications

Model	Head	Objectives	Stand	Illumination
SZM-D	Binocular	0,7x.... 4,5x Zoom	Pillar stand	Incident and transmitted 12V/15W halogen with separated brightness controls

Technical specifications of the built-in camera

Resolution	1280 x 1024 pixels (1,3 Mpixels)
Sensor	CMOS 1/3"
Pixel Size	3,6 µm x 3,6 µm
Imaging Area	6.67 mm x 5.33 mm
Frame Rate at Full Resolution	15 frames/sec
Frame Rate at 640x480	55 frames/sec
Optical Format	1/3"
Aspect Ratio	4:3
S/N Ratio	44 dB
Dynamic Range	71 dB
ADC	8 bit
Data Output (Uncompressed Video)	3x8 bit
Exposure Range	0-219 msec
Sensitivity	1,0V/Lux-second
C-Mount Lens Adapter	No
System Requirements	Windows XP/Vista, Win7, Win8, Win10, 32/64bit, USB 2.0
Software	Optika Vision Lite, Optika view, TWAIN interface, several freeware for image elaboration
Capture Features	Continuous auto white balance, continuous auto exposure
Included with the camera	Optika Vision Lite package, 1.5 m USB cable.



DM Series - Accessories

SZM-D

ST-081	Eyepieces (pair) WF10x/20 mm.
ST-082	Eyepieces (pair) WF15x/15 mm.
ST-083	Eyepieces (pair) WF20x/10 mm.
ST-084	Micrometric eyepiece WF10x/20 mm.
ST-085	Additional lens 0,5x (w.d. 165mm).
ST-091	Additional lens 0,75x (w.d. 117mm).
ST-086	Additional lens 1,5x (w.d. 47mm).
ST-087	Additional lens 2x (w.d. 26mm).
ST-088	Polarising set (filters and rotating stage).
ST-040	Darkfield condenser.
ST-041	Sample clip.
ST-100	Hand moving stage.
ST-036	Eye cups (pair) type 2.
ST-012	White/black object-plate, type 2 dia. 95 mm.
ST-014	Glass stage, type 2, dia. 95 mm.
ST-038	Halogen bulb, 12V/15W.
ST-037	Halogen bulb, 12V/15W, with dichroic mirror.
ST-033	Dust cover type 13.
M-114	C-Mount adapter for 1/2" sensor.
M-116	C-Mount adapter for 2/3" sensor.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.
M-113.1	Ring adapter, 30mm (for monocular and binocular microscopes).

15104 - Lens cleaner, 50ml

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.



Headquarters and Manufacturing Facilities

OPTIKA® S.r.l. Via Rigla, 30 - 24010 Ponteranica (BG) - ITALIA - Tel.: +39 035.571.392 - Fax: +39 035.571.435 - info@optikamicroscopes.com

Optika Sales branches

OPTIKA® Spain spain@optikamicroscopes.com

OPTIKA® China china@optikamicroscopes.com

OPTIKA® USA usa@optikamicroscopes.com

OPTIKA® Hungary hungary@optikamicroscopes.com