



DM-5 / DM-5UP / B-150DM / B-150DB / B-150DMR / B-150DBR B-190TB / B-290TB / SZM-D





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.

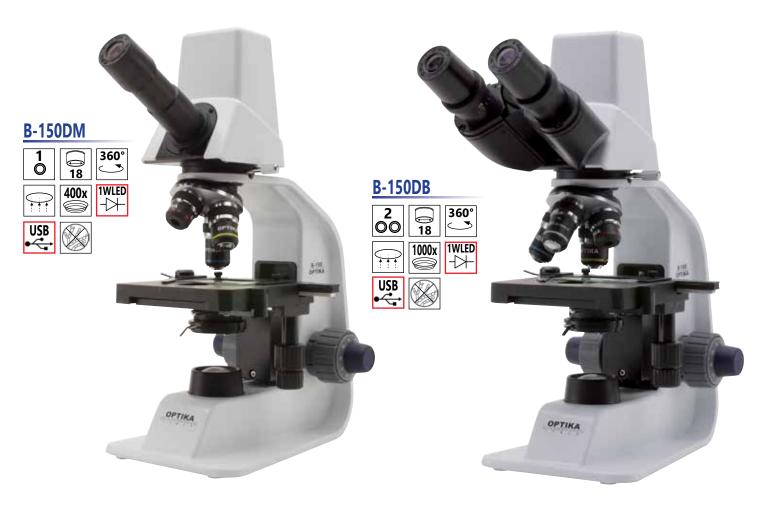
DM-5 Digital Monocular microscope 480Kpixels (software included). DM-5UP Digital Monocular microscope 480Kpixels, USB powered (software included). **B-150DM** Digital monocular microscope 400x, 1.3Mp, double layer stage (software included). **B-150DMR** Digital monocular microscope 400x, 1.3Mp, double layer stage, with rechargeable batteries (software included). **B-150DB** Digital binocular microscope 1000x, 3.2Mp, double layer stage (software included). **B-150DBR** Digital binocular microscope 1000x, 3.2Mp, double layer stage, with rechargeable batteries (software included). **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



DM Series - Models







DM Series - **DM-5**



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

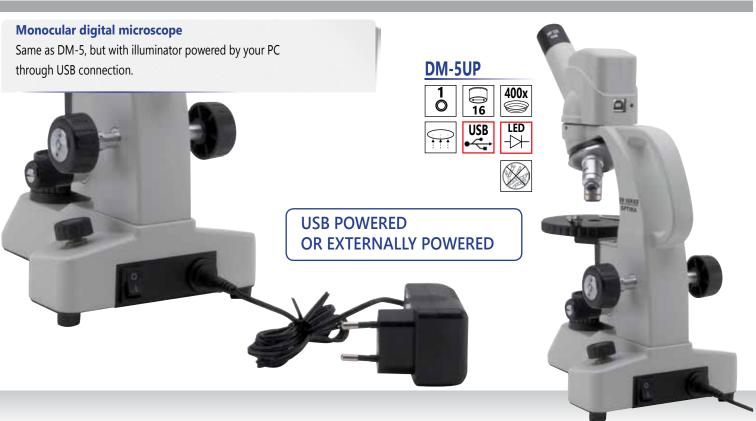
Software: OPMIAS (Optika Micro Image Analysis Software),

for Windows XP/Vista/Win7, Win8, 32-64 bit

Packing: Carton box with inner foam



DM Series - **DM-5UP**



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

















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

Coaxial coarse and fine, with focusing stop **Focusing system:**

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, 32-64 bit

Carton box with inner foam **Packing:**



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: 1 watt 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, 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.









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
	640x480 - 25 fps	1280x1024 - 15 fps	2048x1536 - 4 fps
Resolution & Frame Rate		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, 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	CCD camera adapter 0,45x.
M-116	CCD camera adapter 0,50x.
M-031	Dust cover type 3.
M-173	Photo adapter for APS-C and Full Frame Reflex cameras.

15104 - Lens cleaner, 50ml





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.





Optical system:

The optical system has been developed for demanding users; it consists of high quality components which guarantee an 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 dioptric 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. 32GB capacity flash memory. 8" screen size. Tablet PC with OPTIKA detachable system.

DM Series - B-190TB

The B-190 series is the result of a perfect fusion between years of experience in the microscopy field and a refined design study. This series represents our product philosophy at its best: Quality, Reliability and Innovation.

Optika is glad to introduce a new member of this key series: The **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:



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.

These microscopes are suitable for routine microscopy and have an ergonomic design for comfortable long-term use.

Optika is glad to introduce a new member of this key series: The **B-290TB**.

Binocular Digital observation head, inclined 30° and Head:

rotatable 360°.

Widefield eyepieces WF10X/20 with field number 20. **Eyepiece:**

Nosepiece: Quadruple revolving nosepiece, rotation on ball bea-

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 mecha-

nism

Illumination:

Light source 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.







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

Tablet specifications

OPERATING SYSTEM	
OS	Windows 8.1
PROCESSOR AND CHIPSET	
Processor manufacturer	Intel
Processor Type	Atom
Model	Z3740
Speed	1,33 GHz
Processor Core	Quad core (4 Cor
<u>MEMORY</u>	
Standard Memory	2 GB
Memory Technology	LPDDR3
Memory Card Reader	Yes
Supported memory	microSD
STORAGE	

Capacity flash memory 32 GB **DISPLAY AND GRAPHICS** Screen Size 20,3 cm (8") Screen Type LCD color TFT Screen Mode **WXGA** 1280 x 800 Screen Resolution Backlight technology **LED** Touchscreen Yes Multi-touch screen Yes **Graphics Controller Manufacturer** Intel **Graphics Controller Model HD** Graphics

NETWORK & COMMUNICATIONLAN wireless Yes

Graphics Memory Technology

Graphics Memory Accessibility

Wireless LAN standard Bluetooth Standard Bluetooth

Standard Bluetooth
INTERFACES / PORTS
HDMI
INPUT DEVICES
GHz

Standard Bluetooth
INTERFACES / PORTS
HDMI
Standard Bluetooth
INTERFACES / PORTS
Keyboard Type

BUILT-IN DEVICES
Microphone
SOFTWARE

Operating System

Operating System Architecture Image Analysis software

BATTERY INFORMATION Number of Cells Battery Chemistry

Battery Capacity
POWER DESCRIPTION
Maximum Power Supply Wattage

WEIGHT AND DIMENSIONS
Thickness
Width

Height Weight (Approximate)

ACCESSORIES Touch-pen IEEE 802.11a/g/n

Yes 4.0

Yes

Touchscreen

Yes

Windows 8.1, Microsoft office, Home & Student 2013

32-bit

OPTIKA VISION LITE

2-cell Lithium Polymer 4960 mAh

10 W

11,5 mm 219 mm 135 mm 415 g

DM Series - Accessories

LPDDR3

Shared

B-190TB

M-001 M-002.1 M-003 M-004 M-008	Eyepiece H5x. Eyepiece WF10x/18mm. Eyepiece WF16x/12mm. Eyepiece with micrometer WF10x/18mm. Eyepiece with pointer WF10x/18mm.
M-137 M-138 M-139 M-141 M-142 M-143	Objective Achromatic 4x/0,10. Objective Achromatic 10x/0,25. Objective Achromatic 20x/0,40. Objective Achromatic 40x/0,65. Objective Achromatic 60x/0,80. 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. OPTIKA immersion oil 10ml. 15008

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

Camera specifications

CAMERA SPECIFICATIONS

Digital camera resolution 3.14 MegaPixels Analog camera resolution Signal output **USB 2.0** Audio Signal NO Sensor Size 1/2.5" Sensor technology **CMOS** Image format 4\3 2048 x 1536 Full Image size

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 Back light control Auto - Man Exposure control Auto - Man

Auto - Man Automatic Gain Control

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)

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

DM Series - Accessories

B-290TB

M-160	Eyepiece WF10x/20mm.
M-161	Eyepiece WF15x.
M-162	Eyepiece WF20x.
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-666 290	Heating stage with digital temperature controller B.

Heating stage, with digital temperature controller B-290 series.

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.

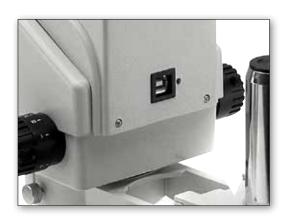
Sharing the same optical system consisting of binocular and trinocular heads with zoom objectives, the four models of the SZM series find their proper application wherever professional instruments are required at a particularly contained cost.

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.





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	5.2 μm x 5.2 μm
Imaging Area	6.67 mm x 5.33 mm
Frame Rate at Full Resolution	15 frames/sec
Frame Rate at 640x480	30 frames/sec
Optical Format	1/2"
Aspect Ratio	4:3
S/N Ratio	44 dB
Dynamic Range	71 dB
ADC	10 bit
Data Output (Uncompressed Video)	3x8 bit
Exposure Range	0-70 msec
Sensitivity	1,0V/Lux-second
C-Mount Lens Adapter	no
System Requirements	Windows XP/Vista, Win7, Win8, 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

	SZIVI-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	CCD camera adapter 0,45x.
M-116	CCD camera adapter 0,50x.
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





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.I. 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 **OPTIKA**° China

spain@optikamicroscopes.com china@optikamicroscopes.com OPTIKA® USA
OPTIKA® Hungary

usa@optikamicroscopes.com hungary@optikamicroscopes.com