

VIDEO AND PHOTO APPLICATIONS

OPTIKAM B05 / OPTIKAM B1 / OPTIKAM B2 / OPTIKAM B3
OPTIKAM B5 / OPTIKAM B9 / OPTIKAM PRO 3LT
OPTIKAM PRO 5LT / OPTIKA HDMI Easy / OPTIKA HDMI / OPTIKA
HDMI Pro / OPTIKAM WIFI / OPTIKAM PRO COOL 5 / TB-3W
TB-5W / TB-3WLT / EDUCAM SERIES / VC SERIES

VIDEO AND PHOTO APPLICATIONS

Video and photo cameras



Video and photo applications

A wide range of instruments fulfilling any requirement in the photo/video field. It has never been so easy to get impressive images from your microscope. Thanks to different resolutions, all digital cameras (to be used with PC or TV set) can meet the demands of either a professional user or people who are looking for an economic but valuable product.

Several models (HDMI model, Pro LT and Pro Cool 5) are designed to be used on trinocular microscopes by using specific adapters (optional accessories). It will be easy to connect these instrument to any microscope, biological or stereo, by C-mount.

The models with optical eyepiece adapter are ready to be used (by means of one of the two eyepieces) on monocular and binocular microscopes too, both biological and stereo.

OPTIKAM Budget Series

USB cameras for general purpose.

OPTIKAM Pro Series

USB cameras with premium performances and advanced software package.

OPTIKAM HDMI Easy

USB and HDMI (720p) camera.

OPTIKAM HDMI

USB and HDMI (1080p) camera.

OPTIKAM HDMI Pro

USB and HDMI (1080p) camera with premium performances.

OPTIKAM WiFi

USB and WiFi camera.

OPTIKAM Pro Cool

USB camera with very high sensitivity and cooled CCD.

TB Series

Tablet PC with C-mount integrated camera.

EDUCAM Series

Multimedia cameras.

VC Series

Analog CCD videocameras for general purpose.

Optika cameras come with the "all-in-one-box" packaged with camera, accessories and software.

4083.13E



4083.13WiFi



Video and photo applications - OPTIKAM Budget Series

OPTIKAM B05 - 4083.B05	Eyepiece Camera
Sensor	CMOS 1/4"
Resolution	640x480 pixels
Frame Rate	30 frames/sec
Optical Format	1/4"
Aspect Ratio	4:3
S/N Ratio	45 dB
Dynamic Range	60 dB
Sensitivity	1,9 V/Lux-second
C-Mount	No
Adapters for stereomicroscopes	30 and 30,5 mm diameter
Calibration slide	None
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port 2.0
Software	Optika Vision Lite / OPTIKA MIPro
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.5 m USB cable, installation manual, CD-Rom

OPTIKAM B05



OPTIKAM B2



OPTIKAM B1 - 4083.B1	C-mount and Eyepiece Camera
Sensor	CMOS 1/2.5"
Resolution	1272 x 952 pixels (1,21 Mpixels)
Frame Rate at Full Resolution	19 frames/sec
Frame Rate 640x480	52 frames/sec
Optical Format	1/3"
Aspect Ratio	4:3
S/N Ratio	44 dB
Dynamic Range	60 dB
Sensitivity	1,0 V/Lux-second
C-Mount:	Yes
Optical adapter	0,45x (for 23mm eyepiece tube)
Adapters for stereomicroscopes	30 and 30,5 mm diameter
Calibration slide	76x24mm micrometric calibration slide
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port 2.0
Software	Optika Vision Lite / OPTIKA IsView
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.8 m USB cable, installation manual, CD-Rom

OPTIKAM B1



OPTIKAM B5



OPTIKAM B2 - 4083.B2	C-mount Camera
Sensor	CMOS 1/3.2"
Resolution	1600 x 1200 pixels (2 Mpixels)
Frame Rate at Full Resolution	10 frames/sec
Frame Rate at 640x480	30 frames/sec
Optical Format	1/3,2"
Aspect Ratio	4:3
S/N Ratio	42,3 dB
Dynamic Range	71 dB
Sensitivity	1,0 V/Lux-second
C-Mount:	Yes
Optical adapter	None
Adapters for stereomicroscopes	None
Calibration slide	76x24mm micrometric calibration slide
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port
Software	Optika Vision Lite / OPTIKA MIPro
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.8 m USB cable, installation manual, CD-Rom

Special model designed for trinocular microscopes only. This camera does not include any optical adapter for biological microscopes or stereomicroscopes. Especially designed for heavy applications, the Optikam B2 is very robust and does not need the installation of any driver in your computer.

Video and photo applications - OPTIKAM Budget Series

OPTIKAM B3 - 4083.B3

C-mount and Eyepiece Camera

Sensor	CMOS 1/2"
Resolution	2048 x 1536 pixels (3,14 Mpixels)
Frame Rate at Full Resolution	6,5 frames/sec
Frame Rate at 640x480	55 frames/sec
Optical Format	1/2"
Aspect Ratio	4:3
S/N Ratio	43 dB
Dynamic Range	61 dB
Sensitivity	1,0 V/Lux-second
C-Mount	Yes
Optical adapter	0,5x (for eyepiece tube)
Adapters for stereomicroscopes	30 and 30,5 mm diameter
Calibration slide	76x24mm micrometric calibration slide
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port 2.0
Software	Optika Vision Lite / OPTIKA IsView
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.8 m USB cable, installation manual, CD-Rom



OPTIKAM B5 - 4083.B5

C-mount and Eyepiece Camera

Sensor	CMOS 1/2,5"
Resolution	2592 x 1944 pixels (5 Mpixels)
Frame Rate at Full Resolution	7 frames/sec
Frame Rate at 640x480	46 frames/sec
Optical Format	1/2,5"
Aspect Ratio	4:3
S/N Ratio	38 dB
Dynamic Range	70,1 dB
Sensitivity	0,53 V/Lux-second
C-Mount	Yes
Optical adapter	0,45x (for eyepiece tube 23mm)
Adapters for stereomicroscopes	30 and 30,5 mm diameter
Calibration slide	76x24mm micrometric calibration slide
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port 2.0
Software	Optika Vision Lite / OPTIKA IsView
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.8 m USB cable, installation manual, CD-Rom



OPTIKAM B9 - 4083.B9

C-mount and Eyepiece Camera

Sensor	CMOS 1/2,3"
Resolution	3664 x 2740 pixels (10 Mpixels)
Frame Rate at Full Resolution	3 frames/sec
Frame Rate at Middle Resolution(1,3Mp)	25 frames/sec
Frame Rate at 640x480	30 frames/sec
Optical Format	1/2,3"
Aspect Ratio	4:3
S/N Ratio	40,5 dB
Dynamic Range	63 dB
Sensitivity	0,44 V/Lux-second
C-Mount	Yes
Optical adapter	0,45x (for 23mm eyepiece tube)
Adapters for stereomicroscopes	30 and 30,5 mm diameter
Calibration slide	76x24mm micrometric calibration slide
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64 bit, USB port 2.0
Software	Optika Vision Lite / OPTIKA IsView
Capture Features	Continuous auto white balance, continuous auto exposure
Accessories included	1.8 m USB cable, installation manual, CD-Rom



Video and photo applications - OPTIKAM Pro Series

High-Performance cameras with advanced software package

C-mount cameras for video and still-image capturing with high performances. These cameras are delivered with our complete OPTIKA VISION SOFTWARE PACKAGE.

Ideal for professional trinocular microscopes.

B-800BF + 4083.11LT



	OPTIKAM PRO 3LT 4083.11LT	OPTIKAM PRO 5LT 4083.12LT
Resolution	2048 x 1536 pixels (3.2 Mpixel)	2560 x 1920 (5.0 Mpixel)
Sensor	CMOS 1/2"	CMOS 1/2,5"
Pixel Size	3.2 μm x 3.2 μm	2.2 μm x 2.2 μm
Image Area	6.55 mm x 4.92 mm	5.70 mm x 4.28 mm
Frame Rate at Full Resolution	12 frames/sec	3 frames/sec
Frame Rate at Half Resolution	24 frames/sec	12 frames/sec
Optical Format	1/2"	1/2"
Aspect Ratio	4:3	4:3
S/N Ratio	43 dB max	43 dB max
ADC	10 bit	10 bit
Data Output (Uncompressed Video)	3x8 bit	3x8 bit
Sensitivity	1.0 V/Lux-second	0.53 V/Lux-second
System Requirements	Windows XP, Vista, Win7, Win8, Win10 32/64bit, USB 2.0 port	Windows XP, Vista, Win7, Win8, Win10 32/64bit, USB 2.0 port
Software	OPTIKA Vision Pro Plus, TWAIN interface, SDK	OPTIKA Vision Pro Plus, TWAIN interface, SDK
Capture Features	Continuous auto white balance, continuous auto exposure, averaging, subsampling (decimation)	Continuous auto white balance, continuous auto exposure, averaging, subsampling (decimation)
Optical adapter	None	None
Included with the camera	3 m USB cable, 76x24mm micrometric calibration slide, C-mount cap, box	3 m USB cable, 76x24mm micrometric calibration slide, C-mount cap, box
Max exposure	1 sec	1 sec
Max extended exposure	26 sec	26 sec

Video and photo applications - OPTIKAM HDMI Easy

4083.13E



OPTIKAM HDMI Easy offers 720P quality images through a simple connection to projector, TV monitor or PC monitor.

The camera allows live video 720P images, the ability to record photos and videos directly into the supplied microSD card, or to a PC through the Optika Vision lite software.

OPTIKAM HDMI Easy is a good solution for various applications: education field, industrial, quality control and in all laboratories.

OPTIKAM HDMI Easy - USB and HDMI (720p) camera.

The years of experience in microscopy have allowed Optika to develop an easy to use 720P HDMI camera that meets and fulfills the different needs related to imaging.

OPTIKAM HDMI Easy is the solution.

Digital camera equipped with a 5Mpixels sensor, a removable micro SD-Card, a very easy to use keyboard to set the the parameters of the camera, C & C-short mount connections.



OPTIKAM HDMI Easy - 4083.13E	C and C-Short mount, Eyepieces Camera
Sensor	1\2.33"
Resolution	5 Megapixels
Key Features	On/Off, zoom, image capture, video capture, menu, AE Exposure
External Ports	HDMI, USB, Micro SD-Card
SD-Card	Images: 2976 x 1674 , Video: 1280 x 720
HDMI Resolution	1280 x 720, 30 Fps
USB Resolution	1280 x 720, 30 Fps
USB Driver	Driver free
System requirements	HDMI, Windows Vista, Win7, Win8, Win10 32/64 bit
Software	Optika Vision Lite
USB Capture features	Resolution and automatic exposure
HDMI features	On/off, zoom, image capture, video capture, automatic exposure, cross , lines, language
Power supply	5V-12V 1000mA
C-mount	Yes
C-short mount	Yes
Optical Adapter	None
Adapters for stereomicroscopes	None
Calibration slide	76x24mm micrometric calibration slide.
Accessories included	Micro SD-Card, HDMI cable, USB cable, CD-Rom.

Video and photo applications - OPTIKAM HDMI

OPTIKAM HDMI - USB and HDMI (1080p) camera.

Your digital unmet needs find in **OPTIKAM HDMI** their solution. The years of experience in microscopy have allowed Optika to develop a video/digital camera that meets and fulfills the diverse needs related to imaging.

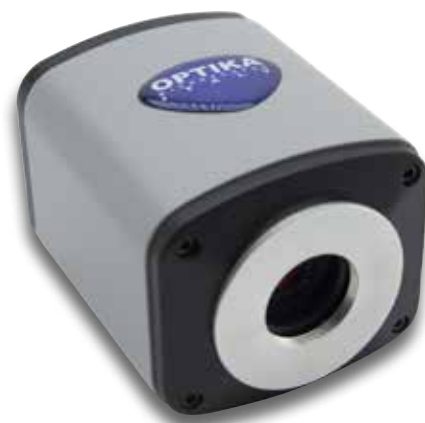
OPTIKAM HDMI is a digital camera equipped with a 5Mpixels sensor, an 8GB removable SD-card, an useful Mouse to draw the camera into the parameters set-up, C-Mount connections and dual USB / HDMI port.

OPTIKAM HDMI offers great quality images through a simple connection to projector, TV monitor or PC monitor. The user can view, select, modify the parameters of the camera with just one click, compare and remove the captured images.

This innovative system provides live video images in high definition (Full HD 1080p), the ability to record photos and videos directly into the supplied SD-card or connected to a PC, to exploit the full potential of the software OPTIKA IsView.

OPTIKAM HDMI is largely used in the education field, in industrial quality control and in all laboratories.

4083.13H



OPTIKAM HDMI - 4083.13H	C-mount, Eyepieces Camera
Sensor	1/2.5"
Resolution	2592 x 1944
Image Acquisition details	Two high-speed FPGA chipsets
Key Features	On/Off, all the rest of features are available through the ON-BOARD software.
External Ports	HDMI, USB, SD-Card
SD-Card	Images: 2592 x 1944, Video: 1920 x 1080
HDMI Resolution	1920 x 1080, 30fps
USB Resolution	1920 x 1080, 1280 x 720, 15fps
USB Driver	Driver free
System requirements	HDMI, Windows XP, Vista, Win7, Win8, Win10 32/64 bit
Software	Optika Vision Lite, Optika IsView
USB Capture features	<ul style="list-style-type: none"> • Resolution. Brightness. • Contrast. Tonality. • Saturation. Gamma. • White Balance.
HDMI features	<ul style="list-style-type: none"> • Cross. Black/white. • Contrast. Sharpness. • Saturation. Brightness. • Gamma. Image mirror. • Image browse. Zoom. • Image compare. Image flip. • Image mask.
Power supply	12V 2000mA
C-mount	Yes
C-short mount	None
Optical Adapter	None
Adapters for stereomicroscopes	None
Calibration slide	76x24mm micrometric calibration slide.
Accessories included	8GB SD-Card; Mouse; HDMI cable; USB cable; CD-Rom.

Video and photo applications - OPTIKAM HDMI Pro

OPTIKAM HDMI Pro - USB and HDMI (1080p) camera with premium performances.

Your digital unmet needs find in **OPTIKAM HDMI Pro** their solution. The years of experience in microscopy have allowed Optika to develop a video/digital camera that meets and fulfills the diverse needs related to imaging.

OPTIKAM HDMI Pro is the solution. Digital camera equipped with a 6Mpixels sensor, an 8GB removable SD-card, an useful Mouse to draw the camera into the parameters set-up, C & C-short mount connections and dual USB / HDMI port.

OPTIKAM HDMI Pro offers the highest quality images through a simple connection to projector, TV monitor or PC monitor. The Onboard software and the mouse allow the user to view, select and modify the parameters of the camera with just one click, they also allows to show, compare and remove the captured images.

This innovative system provides live video images in high definition (Full HD 1080p), the ability to record photos and videos directly into the supplied SD-card or connected to a PC, to exploit the full potential of the software OPTIKA IsView.

OPTIKAM HDMI Pro is the best solution for various applications. It's largely used in the education field, in industrial quality control and in all laboratories.

4083.13



HDMI™



TV monitor + 4083.13 - B-383LD



OPTIKAM HDMI Pro - 4083.13	C and C-Short mount, Eyepieces Camera
Sensor	1/2.8" Sony Cmos Sensor
Resolution	3264 x 1836 (6 megapixels)
Image Acquisition details	Truecolor, two high-speed FPGA chipsets
Key Features	On/Off, all the rest of features are available through the ON-BOARD software.
External Ports	HDMI, USB, SD-Card
SD-Card	Images: 3264 x 1836, Video: 1280 x 720
HDMI Resolution	1920 x 1080, 30fps
USB Resolution	1920 x 1080, 1280 x 720, 30fps
USB Driver	Driver free
System requirements	HDMI, Windows XP, Vista, Win7, Win8, Win10 32/64 bit
Software	Optika Vision Lite, Optika IsView
USB Capture features	<ul style="list-style-type: none"> • Resolution. Brightness. • Contrast. Tonality. • Saturation. Gamma. • White Balance.
HDMI features	<ul style="list-style-type: none"> • Cross. Black/white. • Contrast. Sharpness. • Saturation. Brightness. • Gamma. Image mirror. • Image browse. Zoom. • Image compare. Image flip. • Image mask.
Power supply	12V 2000mA
C-mount	Yes
C-short mount	Yes
Optical Adapter	None
Adapters for stereomicroscopes	None
Calibration slide	76x24mm micrometric calibration slide.
Accessories included	8GB SD-Card; Mouse; HDMI cable; USB cable; CD-Rom.

Video and photo applications - OPTIKAM WiFi

OPTIKAM WiFi – USB and WiFi camera.

Your digital unmet needs find in **OPTIKAM WiFi** their solution. The years of experience have allowed Optika to develop a WiFi camera that meets and fulfills the diverse needs related to imaging.

OPTIKAM WiFi is the solution! Our WiFi camera is equipped with a 5Mpixels sensor, USB connection and C & C-short mount.

OPTIKAM WiFi offers the Easiest way to show the camera live view on your Smartphone or on any other O.S. having a wifi connection. The on-board software allows any user to show the camera live view by simply running the browser and introducing the WiFi camera address.

This innovative system provides live video images in various resolutions and the the ability to record photos and videos directly on your Smathphone or Tablet.

Not any Software or App is needed as the software is On-board the WiFi camera, this generally called Browser connection avoids you to have any Wifi Ruoter.

Despite of the On-board software some Apps are also available.

Last but not least more than 20 Users are simultaneously allowed to be connected so they can frendly use the WiFi camera on their own IOS, Windows, BlackBerry or Android systems.

OPTIKAM WiFi is the best solution for various applications above all in the education field.

4083.WiFi



4083.WiFi + TABLET - B-293



OPTIKAM WiFi - 4083.WiFi	C and C-Short mount, Eyepieces Camera
Sensor	1\2.5"
Resolution	5 Megapixels
External Ports	USB
WiFi signal	From the camera
WiFi Router requirements	No
WiFi password	No
Ethernet port	No
WiFi Frame rate Low resolution	2 frames/sec: 640x480 with 10 user
WiFi Frame rate other resolutions	1 frame/sec: 1024x768 with 10 users, 1 frames/3 sec: 1600x1200 with 10 users
USB Frame rate Full resolution	3 frames/sec: 2592x1944
USB Driver	Driver free
WiFi system requirements	Windows Tablet, Android Table, IOS Tablet, IOS Phone, Android Phone, Windows Phone.
USB System requirements	Windows Vista, Win7, Win8, Win10 32/64 bit, USB 2.0
USB Software	Optika Vision Lite
WiFi available APP	Via Browser: No APP is needed
WiFi additional available APP	For IOS and Android
USB Capture features	Continuous auto white balance, continuous auto exposure, image size, image capture, compressed video capture.
WiFi features	Automatic exposure, resolution.
Power Supply	5V 2000mA
C-mount	Yes
C-short mount	Yes
Optical Adapter	Yes
Adapters for stereomicroscopes	Yes
Calibration slide	76x24mm micrometric calibration slide.
Accessories included	USB cable, CD-Rom.

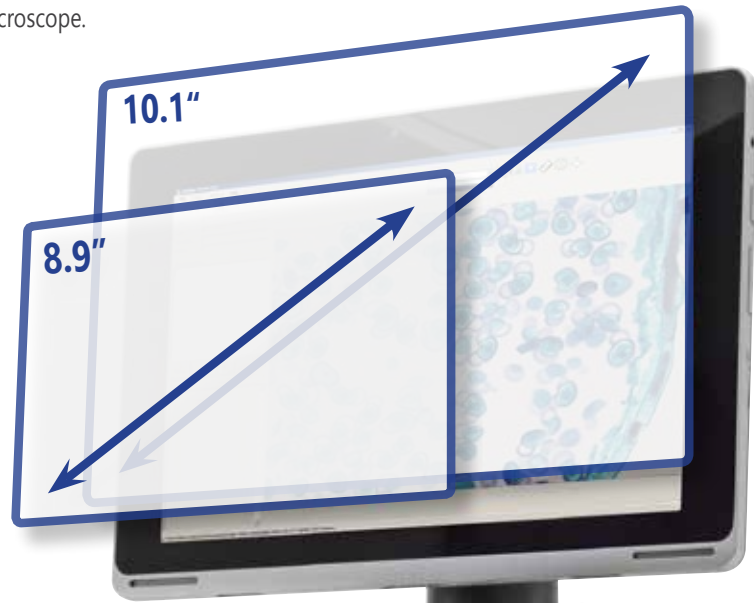
Video and photo applications - TB Series

TB SERIES - Tablet PC with C-mount integrated camera.

"A 2 in 1 solution in digital microscopy"

A Tablet PC with OPTIKA detachable system, 8.9" or 10.1" LCD touch screen, in combination with 3Mp or 5Mp cameras; a universal system which can be installed on every trinocular microscope.

TB-5W - TB-3W



B-383PHi + TABLET

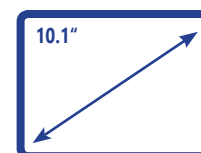
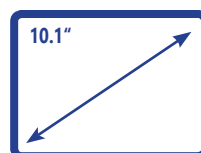
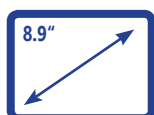
TB-3WLT



Video and photo applications - TB Series

TABLET TECHNICAL SPECIFICATIONS

Model	Tablet 8.9"	Tablet 10.1"
Operating System	Windows 8.1 32-bit, Microsoft Office 365 Personal (1 year subscription)	Windows 8.1 32-bit
Language	Multilanguages already installed	Multilanguages already installed
Image capturing software	OPTIKA Vision lite	OPTIKA Vision lite
CPU	Intel® Bay trail Z3735F, Quad core	Intel® Atom™ Z3735F, Quad core
CPU speed	1,83 GHz	1,33 GHz
Graphics Card	Intel® HD Graphics, LPDDR3 controller	Intel® HD Graphics 3D Accelerator
Memory	Ram 2,048 GB, LPDDR3	Ram 2,048 GB DDR3L
LCD display	LED 8.9" IPS Multi Touch Screen	LED 10.1" IPS Multi Touch Screen
LCD resolution	1920 x 1200 Full HD, Active Matrix TFT Color LCD	1280x800, 16/10 (WXGA)
Storage	HDD 16+16GB	HDD 32GB
Network	Wireless IEEE 802.11 a/g/n, Bluetooth 4.0	Wireless IEEE 802.11 b/g/n/ + BT, Bluetooth 4.0
Input/output ports	Micro USB-B - Microphone, Micro SD card reader, Micro HDMI Head-phone, Separated power supply input	Micro USB-B, Microphone, Micro SD card reader, Micro HDMI, Head-phone
Control Buttons	Auto rotate off, volume control	Auto rotate off, volume control
Battery Technology	Lithium-ion battery, 2x cell	Lithium-ion battery, 2x cell
Battery capacity	6000 mAh	5700 mAh
Max load	10 W	18 W
Dimensions	Thickness 9,5 mm Height 15,7 cm Width 22,0 cm	Thikness 8,9 mm, Height 17,7 cm, Width 26,1 cm
Weight	477 g	585 g
Cables included	USB camera cable, OTG cable	OTG cable (Micro USB-B to USB-A)
Also included	Instruction manual, Touch Pen and keyboard with touchpad.	Instruction manual, Cleaning Cloth, Keyboard with touchpad, touch pen.



CAMERA TECHNICAL SPECIFICATIONS

Model	TB-3WLT	TB-3W	TB-5W
Digital camera resolution	3,14 MegaPixels	3,14 MegaPixels	5,0 MegaPixels
Analog camera resolution	NO	NO	NO
Signal output	USB 2.0	USB 2.0	USB 2.0
Audio Signal	NO	NO	NO
Sensor Size	1\2"	1\2"	1\2,5"
Sensor technology	CMOS	CMOS	CMOS
Image format	4\3	4\3	4\3
Full Image size	2048 x 1536	2048 x 1536	2592 x 1944
Pixel size	3,2 x 3,2 micron	3,2 x 3,2 micron	2,2 x 2,2 micron
Frame rate full resolution	6,5 frames/sec (2048x1536)	6,5 frames/sec (2048x1536)	7 frames/sec (2592 x 1944)
Frame rate other resolutions	28 frame/sec (1024x768) 55 frames/sec (640x480)	28 frame/sec (1024x768) 55 frames/sec (640x480)	46 frames/sec (640x480)
Sensitivity	1,0 V/Lux-second (550 nm)	1,0 V/Lux-second (550 nm)	0,53 V/Lux-second (550 nm)
Signal / noise ratio	43 dB	43 dB	38 dB
Dynamic range	61 dB	61 dB	70.1 dB

Video and photo applications - OPTIKAM Pro Cool

A new CCD cooled camera for fluorescence applications

- * Scientific-grade CCD chip
- * 5 Mega pixels resolution (2580x1944 pixels)
- * 12 bit color RGB
- * Peltier-cooled to 30° below room temperature
- * Very long exposure time for fluorescence imaging
- * Anti "amplifier glow" function for long exposure
- * CNC aluminum alloy metal case



OPTIKAM Pro Cool 5 - 4083.CL5

CCD Cooled Camera

CCD chip manufacturer, model	Sony, ICX282AQ
CCD scan mode	Interline transfer
CCD size	2/3"
Pixels	3.4 μm x 3.4 μm
G sensitive	280 mV
Resolution	2580H x 1944V
Filter	RGB
C-mount	Yes
Frame Rate at Max Resolution	3 fps (2580x1944)
Frame Rate at middle Resolution	10 fps (1280x932)
Low-speed readout	Yes
A/D conversion	8/12 bit
Peltier cooling system	30°C below room temperature
Exposure control	Automatic, manual
Exposure time	0.1ms - 6 minutes
Anti "amplifier glow"	Yes
White balance	Automatic, manual
Parameter controls	Image size, brightness, gain, exposure time, white balance
Interface	USB2.0 / 480Mb/s
Dimensions	130mm x 111mm x 54mm
System Requirements	Windows XP/Vista, Win7, Win8, Win10 32/64bit, USB 2.0 port
Software	Optika View

Video and photo applications - EDUCAM® Series - Multimedia cameras

The EDUCAM® video camera is especially designed to meet the various requirements in the educational field. When it is connected to a professional monitor or simply to a TV set, EDUCAM® is able to carry out many different functions.

It can be used as an episcope, for the reproduction of:

- texts, documents, photographs;
- to enlarge small objects, insects, minerals;
- for video-microscopy, connected to microscopes used in biology or to stereomicroscopes;
- as an overhead projector, for the projection of drawings;
- as a camera for teleconferences, assemblies, meetings;
- as a camera for filming, with the help of a video recorder.

Its ultra-high sensitivity enables to record clearly even in low-light conditions.

The special lens enables you to focus from 0,76 cm, up to an infinite distance. An extremely sensitive microphone (only on Multimedia models), records the teacher's voice during the lesson, or sounds and noises from the surrounding area, that can be heard via the TV itself, or via a separate amplifying system.

The microphone can be switched off if required.

The special 50-or 65-cm flexible arm (12mm dia.) and the heavy weight of the base (approx. 2.7 Kg), make EDUCAM® versatile, sturdy and stable at the same time.

The CCD camera is placed on the end of a flexible arm that can be safely twisted in any position, even projecting from the base, without affecting the system stability. A special joint allows the head to rotate without damaging the wires inside the flexible arm. All models are equipped with an external power supply and a dual adapter for video-microscopy (for biological and stereo microscopes). For the connection to a PC, a USB video grabber is available as option (see next page, CONV-USB video grabber). In the model EDUCAM USB, the video grabber is built-in.

EDUCAM



	MULTIMEDIA 4083	MULTIMEDIA PRO 4083.1	STUDENT 4083.2	STUDENT PRO 4083.3	MIC 4083.5	USB 4083.4
CCD element	1/3"	1/3"	1/3"	1/3"	1/3"	1/3"
Resolution (TV lines)	420	420	420	420	420	420
Total pixels	244.000	244.000	244.000	244.000	244.000	307.000
Signal/noise ratio	>48 dB	>48 dB	>48 dB	>48 dB	>48 dB	>48 dB
Sensitivity (lux/F:1.2)	0.08lux/F1.2	0.08lux/F1.2	0.08lux/F1.2	0.08lux/F1.2	0.08lux/F1.2	0.08lux/F1.2
Electronic shutter	yes	yes	yes	yes	yes	yes
Automatic gain control	yes	yes	yes	yes	yes	yes
White balance (auto)	yes	yes	yes	yes	yes	yes
Video signal	PAL (NTSC opt.)	PAL (NTSC opt.)	PAL (NTSC opt.)	PAL (NTSC opt.)	PAL (NTSC opt.)	PAL (NTSC opt.)
USB output	-----	-----	-----	-----	-----	yes
Digital resolution	-----	-----	-----	-----	-----	640x480 pixels
Working distance	>0,76 cm	>0,76 cm	>0,76 cm	>0,76 cm	>0,76 cm	>0,76 cm
Objective	8 mm	8 mm	8 mm	8 mm	8 mm	8 mm
Magnification	> 90x	> 90x	> 90x	> 90x	> 90x	> 90x
Microphone	yes	yes	-----	-----	-----	yes
Audio signal	analogic	analogic	-----	-----	-----	analogic
Voltage	15Vdc	15Vdc	12Vdc	12Vdc	12Vdc	15Vdc
Power adapter 230/12Vdc	included	included	included	included	included	included
Flexible arm length	50 cm	65 cm	50 cm	65 cm	-----	65 cm
Base diameter	17 cm	17 cm	17 cm	17 cm	-----	17 cm
Weight	3,4 Kg	3,5 Kg	3,3 Kg	3,4 Kg	0,4 Kg	3,5 Kg
Microscope adapters	included	included	included	included	included	included
System Requirements						Windows XP, Vista, Win7, Win8, Win10 32-64 Bit, USB 2.0 port

Video and photo applications - VC Series

VC-01



VC-01
VC-04



VC-02
VC-03



CONV-USB



VC-05



Video and photo applications - VC Series

VC Series - Analogue CCD videocameras for general purpose.

Videomicroscopy system composed by a color CCD TV camera, complete with Bio & Stereo Microscope adapter tube, integrated power supply unit, cables and manuals.

VC-01	Videomicroscopy system
Sensor	CCD SONY sensor 1/3"
Horizontal Resolution	420 TV lines (PAL)
Picture elements	500[H]x582[V]
Video output	BNC VBS 1.0Vp-p, 75 Ohm
C-Mount	C/CS
Sensitivity	0.5lux/F=1.2
Auto white balance	Yes
Auto gain control	Yes
Load current	150mA
Dimension	60x50x145mm - Weight 400g
Operating temperature	-10° to + 50°

VC-04	Videomicroscopy system
Sensor	CCD SONY sensor 1/3"
Horizontal Resolution	480 TV lines (PAL)
Picture elements	752[H]x582[V]
Video output	BNC VBS 1.0Vp-p, 75 Ohm
C-Mount	C/CS
Sensitivity	0.8lux/F=1.2
Auto white balance	Yes
Auto gain control	Yes
Load current	150mA
Dimension	60x50x145mm - Weight 400g
Operating temperature	-10° to + 50°

Color CCD TV camera for C-Mount connection, complete with cables, SCART adapter & manual.

VC-02	Videomicroscopy system
Sensor	CCD SONY sensor 1/3"
Horizontal Resolution	420 TV lines (PAL)
Picture elements	500[H]x582[V]
Video output	BNC VBS 1.0Vp-p, 75 Ohm
C-Mount	C/CS
Sensitivity	0.5lux/F=1.2
Auto white balance	Yes
Auto gain control	Yes
Load current	150mA
Dimension	60x50x145mm - Weight 400g
Operating temperature	-10° to + 50°

VC-03	Videomicroscopy system
Sensor	CCD SONY sensor 1/3"
Horizontal Resolution	480 TV lines (PAL)
Picture elements	752[H]x582[V]
Video output	BNC VBS 1.0Vp-p, 75 Ohm
C-Mount	C/CS
Sensitivity	0.8lux/F=1.2
Auto white balance	Yes
Auto gain control	Yes
Load current	150mA
Dimension	60x50x145mm - Weight 400g
Operating temperature	-10° to + 50°

VC-05 Eyepiece CCD camera

Simple eyepiece camera with CCD sensor. 340 TV Lines (PAL).

CONV-USB Video Grabber

Analogic to Digital signal converter for PC.

Real time video capture from camcorder, VCR or camera. User friendly software easily stores and manages images & videos. Real time/full size Video capture window. The CONV-USB video grabber comes with a CD with drivers for Windows XP/Vista, Win7, Win8, Win10, 32-64bit.

Adapter reference list - OPTIKAM Budget Series

	With ADAPTER OPTIKAM B05	With ADAPTER OPTIKAM B1, B3, B5 & B9	With NO ADAPTER OPTIKAM B2
Biological microscopes			
B-20 - M-100FL (Monocular head)	READY TO USE	READY TO USE	M-114
B-50 (Monocular head)	READY TO USE	READY TO USE	M-114
B-150 (Monocular and binocular head)	READY TO USE	READY TO USE	M-114
B-191 (Monocular head)	READY TO USE	READY TO USE	M-114
B-192 (Binocular head)	READY TO USE	READY TO USE	M-114
B-193 (Trinocular head)	READY TO USE	READY TO USE	M-114
B-292 (Binocular head)	READY TO USE	READY TO USE	M-114
B-293 (Trinocular head)	READY TO USE	READY TO USE	M-114
B-382 (Binocular head)	READY TO USE	READY TO USE	M-114
B-383 (Trinocular head)	READY TO USE	READY TO USE	M-114
B-500 (Binocular head)	READY TO USE	READY TO USE	M-114+M-113.1
B-500 (Trinocular head)	M-699	M-699	M-620.1
B-500 ERGO (binocular head ONLY)	READY TO USE	READY TO USE	M-114+M-113.1
B-500Ti-* (Multihead) for Binocular head	READY TO USE	READY TO USE	M-114+M-113.1
B-500Ti-* (Multihead) for Trinocular head	READY TO USE	READY TO USE	M-778
B-800 & B-1000 (Trinocular head)	M-699	M-699	M-620.1
B-800 & B-1000 ERGO (Binocular head)	READY TO USE	READY TO USE	M-114+M-113.1
B-800 & B-1000 ERGO (Trinocular head)	READY TO USE	READY TO USE	M-114
XDS-2 (Trinocular head)	READY TO USE	READY TO USE	M-778
XDS-3 (Trinocular head)	M-699	M-699	M-789
XDS-2ERGO (Trinocular connection)	READY TO USE	READY TO USE	M-114

Stereomicroscopes

STX (Binocular head)	READY TO USE	READY TO USE	M-114
MS-2 (Binocular head)	READY TO USE	READY TO USE	M-114
S-10-20-30-40-45-50 (Binocular head)	M-113.2	READY TO USE	M-114 + M-113.2
LAB-10 LAB-20 (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
SZM (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
SZM (Trinocular head)	READY TO USE	READY TO USE	ST-090
SZN (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
SZN (Trinocular head)	READY TO USE	READY TO USE	ST-147.1
SZP (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
SZP (For Trinocular connection)	ST-170	ST-170	ST-170 + M-114
SZM-SMD (Trinocular head)	READY TO USE	READY TO USE	ST-090
SZM-GEM-1 (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
SZM-GEM-2 (Trinocular head)	READY TO USE	READY TO USE	ST-090
OPTIGEM-3 (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
OPTIGEM-4 (Trinocular head)	READY TO USE	READY TO USE	ST-147.1
OPTIGEM-1 (Binocular head)	READY TO USE	READY TO USE	M-114 + M-113.1
OPTIGEM-2 (Trinocular head)	READY TO USE	READY TO USE	ST-090
XC-100L (Monocular head)	READY TO USE	READY TO USE	M-114
XZ-1 (Monocular head)	READY TO USE	READY TO USE	M-114
XZ-2 (Binocular head)	READY TO USE	READY TO USE	M-114

Adapter reference list - TABLET PC and OPTIKAM Pro Series

	With ADAPTER TB-3WLT, TB-3W or TB-5W Tablet	With NO ADAPTER OPTIKAM PRO3 LT or PRO5 LT	With NO ADAPTER OPTIKAM PRO COOL 5
Biological microscopes	Only for TRINOPOINT		
B-20 - M-100FL (Monocular head)	NO	NO	M-116
B-50 (Monocular head)	NO	NO	M-116
B-150 (Monocular and binocular head)	NO	NO	M-116
B-191 (Monocular head)	NO	NO	M-116
B-192 (Binocular head)	NO	NO	M-116
B-193 (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	M-114	M-116
B-292 (Binocular head)	NO	NO	M-116
B-293 (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	M-114	M-116
B-382 (Binocular head)	NO	NO	M-116
B-383 (Trinocular head)	READY TO USE	M-114	M-116
B-500 (Binocular head)	NO	NO	M-116 + M-113.1
B-500 (Trinocular head)	M-699	M-620.1	M-620.1
B-500 ERGO (binocular head ONLY)	NO	NO	M-116 + M-113.1
B-500Ti-* (Multihead) for Binocular head	NO	NO	M-116 + M-113.1
B-500Ti-* (Multihead) for Trinocular head	READY TO USE – FREE TO MOVE 360 DEGREE	M-778	M-116
B-800 & B-1000 (Trinocular head)	M-699	M-620.1	M-620.1
B-800 & B-1000 ERGO (Binocular head)	NO	NO	M-116 + M-113.1
B-800 & B-1000 ERGO (Trinocular head)	READY TO USE	M-114	M-116
XDS-2 (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	M-778	M-116
XDS-3 (Trinocular head)	M-699	M-789.1	M-789.2
XDS-2ERGO (Trinocular connection)	READY TO USE	M-114	M-116
Stereomicroscopes			
STX (Binocular head)	NO	NO	NO
MS-2 (Binocular head)	NO	NO	M-116
S-10-20-30-40-45-50 (Binocular head)	NO	NO	M-116 + M-113.2
LAB-10 LAB-20 (Binocular head)	NO	NO	M-116 + M-113.1
SZM (Binocular head)	NO	NO	M-116 + M-113.1
SZM (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	ST-090.1	M-116
SZN (Binocular head)	NO	NO	M-116 + M-113.1
SZN (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	ST-147.1	M-116
SZP (Binocular head)	NO	NO	M-116 + M-113.1
SZP (For Trinocular connection)	ST-170	ST-170 + M-114	ST-170 + M-116
SZM-SMD (Trinocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	ST-090	M-116
SZM-GEM-1 (Binocular head)	NO	NO	M-116 + M-113.1
SZM-GEM-2 (Trinocular head)	Not Suggested	ST-090.1	M-116
OPTIGEM-3 (Binocular head)	NO	NO	M-116 + M-113.1
OPTIGEM-4 (Trinocular head)	Not Suggested	ST-147.1	M-116
OPTIGEM-1 (Binocular head)	NO	NO	M-116 + M-113.1
OPTIGEM-2 (Trinocular head)	Not Suggested	ST-090.1	M-116
XC-100L (Monocular head)	NO	M-114	NO
XZ-1 (Monocular head)	READY TO USE – FREE TO MOVE 360 DEGREE	M-114	NO
XZ-2 (Binocular head)	NO	M-114	NO

Adapter reference list - HDMI - WiFi

	With NO ADAPTER	With NO ADAPTER	With ADAPTER
	OPTIKAM HDMI Pro, OPTIKAM HDMI	OPTIKAM HDMI Easy	OPTIKAM WiFi
Biological microscopes			
B-20 - M-100FL (Monocular head)	M-114	M-114	READY TO USE
B-50 (Monocular head)	M-114	M-114	READY TO USE
B-150 (Monocular and binocular head)	M-114	M-114	READY TO USE
B-191 (Monocular head)	M-114	M-114	READY TO USE
B-192 (Binocular head)	M-114	M-114	READY TO USE
B-193 (Trinocular head)	M-114	M-114	READY TO USE
B-292 (Binocular head)	M-114	M-114	READY TO USE
B-293 (Trinocular head)	M-114	M-114	READY TO USE
B-382 (Binocular head)	M-114	M-114	READY TO USE
B-383 (Trinocular head)	M-114	M-114	READY TO USE
B-500 (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
B-500 (Trinocular head)	M-620.1	M-620.1	M-699
B-500 ERGO (binocular head ONLY)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
B-500Ti-* (Multihead) for Binocular head	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
B-500Ti-* (Multihead) for Trinocular head	M-114	M-114	READY TO USE
B-800 & B-1000 (Trinocular head)	M-699 + M-114	M-699 + M-114	M-699
B-800 & B-1000 ERGO (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
B-800 & B-1000 ERGO (Trinocular head)	M-114	M-114	READY TO USE
XDS-2 (Trinocular head)	M-114	M-114	READY TO USE
XDS-3 (Trinocular head)	M-789.1	M-789.1	M-699
XDS-2ERGO (Trinocular connection)	M-114	M-114	READY TO USE
Stereomicroscopes			
STX (Binocular head)	NO	M-114	READY TO USE
MS-2 (Binocular head)	M-114	M-114	READY TO USE
S-10-20-30-40-45-50 (Binocular head)	M-114 + M-113.2	M-114 + M-113.2	READY TO USE
LAB-10 LAB-20 (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
SZM (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
SZM (Trinocular head)	M-114	M-114	READY TO USE
SZN (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
SZN (Trinocular head)	ST-147.1	ST-147.1	READY TO USE
SZP (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
SZP (For Trinocular connection)	ST-170 + M-114	ST-170 + M-114	ST-170
SZM-SMD (Trinocular head)	M-114	M-114	READY TO USE
SZM-GEM-1 (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
SZM-GEM-2 (Trinocular head)	M-114	M-114	READY TO USE
OPTIGEM-3 (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
OPTIGEM-4 (Trinocular head)	ST-147.1	ST-147.1	READY TO USE
OPTIGEM-1 (Binocular head)	M-114 + M-113.1	M-114 + M-113.1	READY TO USE
OPTIGEM-2 (Trinocular head)	M-114	M-114	READY TO USE
XC-100L (Monocular head)	M-114	M-114	READY TO USE
XZ-1 (Monocular head)	M-114	M-114	READY TO USE
XZ-2 (Binocular head)	M-114	M-114	READY TO USE

Adapter reference list - VC Series & EDUCAM

	With NO ADAPTER	With ADAPTER	With ADAPTER
	VC-02 or VC-03	VC-01 or VC-04	EDUCAM
Biological microscopes	Only for "c" mount - Trino microscopes		
B-20 - M-100FL (Monocular head)	NO	READY TO USE	READY TO USE
B-50 (Monocular head)	NO	READY TO USE	READY TO USE
B-150 (Monocular and binocular head)	NO	READY TO USE	READY TO USE
B-191 (Monocular head)	NO	READY TO USE	READY TO USE
B-192 (Binocular head)	NO	READY TO USE	READY TO USE
B-193 (Trinocular head)	M-114	READY TO USE	READY TO USE
B-292 (Binocular head)	NO	READY TO USE	READY TO USE
B-293 (Trinocular head)	M-114	READY TO USE	READY TO USE
B-382 (Binocular head)	NO	READY TO USE	READY TO USE
B-383 (Trinocular head)	M-114	READY TO USE	READY TO USE
B-500 (Binocular head)	NO	READY TO USE	READY TO USE
B-500 (Trinocular head)	M-620	M-699	M-699
B-500 ERGO (binocular head ONLY)	NO	READY TO USE	READY TO USE
B-500Ti-* (Multihead) for Binocular head	NO	READY TO USE	READY TO USE
B-500Ti-* (Multihead) for Trinocular head	M-778	READY TO USE	READY TO USE
B-800 & B-1000 (Trinocular head)	M-620	M-699	M-699
B-800 & B-1000 ERGO (Binocular head)	NO	READY TO USE	READY TO USE
B-800 & B-1000 ERGO (Trinocular head)	M-114	READY TO USE	READY TO USE
XDS-2 (Trinocular head)	M-778	READY TO USE	READY TO USE
XDS-3 (Trinocular head)	M-789	M-699	M-699
XDS-2ERGO (Trinocular connection)	M-114	READY TO USE	READY TO USE
Stereomicroscopes			
STX (Binocular head)	NO	READY TO USE	READY TO USE
MS-2 (Binocular head)	NO	READY TO USE	READY TO USE
S-10-20-30-40-45-50 (Binocular head)	NO	M-113.2	M-113.2
LAB-10 LAB-20 (Binocular head)	NO	READY TO USE	READY TO USE
SZM (Binocular head)	NO	READY TO USE	READY TO USE
SZM (Trinocular head)	ST-090	READY TO USE	READY TO USE
SZN (Binocular head)	NO	READY TO USE	READY TO USE
SZN (Trinocular head)	ST-147	READY TO USE	READY TO USE
SZP (Binocular head)	NO	READY TO USE	READY TO USE
SZP (For Trinocular connection)	ST-170 + ST-174	ST-170	ST-170
SZM-SMD (Trinocular head)	ST-090	READY TO USE	READY TO USE
SZM-GEM-1 (Binocular head)	NO	READY TO USE	READY TO USE
SZM-GEM-2 (Trinocular head)	ST-090	READY TO USE	READY TO USE
OPTIGEM-3 (Binocular head)	NO	READY TO USE	READY TO USE
OPTIGEM-4 (Trinocular head)	ST-147	READY TO USE	READY TO USE
OPTIGEM-1 (Binocular head)	NO	READY TO USE	READY TO USE
OPTIGEM-2 (Trinocular head)	ST-090	READY TO USE	READY TO USE
XC-100L (Monocular head)	NO	READY TO USE	READY TO USE
XZ-1 (Monocular head)	NO	READY TO USE	READY TO USE
XZ-2 (Binocular head)	NO	READY TO USE	READY TO USE

Adapter reference list - REFLEX CAMERAS

	APS Sensor + T/2 BOUGHT BY CUSTOMER	FULL Frame / 35mm SRL Cameras + T/2 BOUGHT BY CUSTOMER	MIRROR-LESS + T/2 BOUGHT BY CUSTOMER
Biological microscopes			
B-20 - M-100FL (Monocular head)	M-173	M-173	M-173
B-50 (Monocular head)	M-173	M-173	M-173
B-150 (Monocular and binocular head)	M-173	M-173	M-173
B-191 (Monocular head)	M-173	M-173	M-173
B-192 (Binocular head)	M-173	M-173	M-173
B-193 (Trinocular head)	M-173	M-173	M-173
B-292 (Binocular head)	M-173	M-173	M-173
B-293 (Trinocular head)	M-173	M-173	M-173
B-382 (Binocular head)	M-173	M-173	M-173
B-383 (Trinocular head)	M-173	M-173	M-173
B-500 (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
B-500 (Trinocular head)	M-699+M-173	M-619	M-699+M-173
B-500 ERGO (binocular head ONLY)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
B-500Ti-* (Multihead) for Binocular head	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
B-500Ti-* (Multihead) for Trinocular head	M-173	M-173	M-173
B-800 & B-1000 (Trinocular head)	M-699+M-173	M-699+M-173	M-699+M-173
B-800 & B-1000 ERGO (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
B-800 & B-1000 ERGO (Trinocular head)	M-173	M-173	M-173
XDS-2 (Trinocular head)	M-173	M-173	M-173
XDS-3 (Trinocular head)	M-699+M-173	M-788	M-699+M-173
XDS-2ERGO (Trinocular connection)	M-173	M-173	M-173
Stereomicroscopes			
STX (Binocular head)	M-173	M-173	M-173
MS-2 (Binocular head)	M-173	M-173	M-173
S-10-20-30-40-45-50 (Binocular head)	M-173 + M-113.2	M-173 + M-113.2	M-173 + M-113.2
LAB-10 LAB-20 (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
SZM (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
SZM (Trinocular head)	M-173	ST-089	M-173
SZN (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
SZN (Trinocular head)	M-173	ST-146	M-173
SZP (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
SZP (For Trinocular connection)	ST-170+M-173	ST-170 + M-173	ST-170+M-173
SZM-SMD (Trinocular head)	M-173	ST-089	M-173
SZM-GEM-1 (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
SZM-GEM-2 (Trinocular head)	M-173	ST-089	M-173
OPTIGEM-3 (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
OPTIGEM-4 (Trinocular head)	M-173	ST-146	M-173
OPTIGEM-1 (Binocular head)	M-173 + M-113.1	M-173 + M-113.1	M-173 + M-113.1
OPTIGEM-2 (Trinocular head)	M-173	ST-089	M-173
XC-100L (Monocular head)	M-173	M-173	M-173
XZ-1 (Monocular head)	M-173	M-173	M-173
XZ-2 (Binocular head)	M-173	M-173	M-173