life science

digital solutions





Get ready to discover the digital world of microscopy with the newest Euromex digital laboratory products. The broad Euromex product range of digital cameras and digital microscopes with built-in camera offers the best suitable solutions for your specific application needs

> Euromex digital laboratory products incorporate all the latest available technology in this field such as WiFi, HDMI and sCMOS sensors, specially designed for fluorescent microscopy. Our digital solutions package includes the powerful ImageFocus software for image analysis



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HIGHLIGHTS

- Monocular and binocular models
- Reversed quadruple nosepiece for semi plan objectives
- Built-in digital 5 MP USB-2.0 camera
- Integrated mechanical stage
- LED and NeoLED™ illumination
- Cordless operation
- 10 Years warranty (2 years on camera)



BioBlue digital (binocular head)



BioBlue digital (monocular head)

SPECIFICATIONS

CAMERA

All the BioBlue digital microscopes are equipped with a 5 MP CMOS USB-2.0 camera, maximum resolution 2560 x 1920. 24 bits color depth. Delivered with ImageFocus Plus software, USB-2.0 cable and a micrometer 1mm/100 slide

SOFTWARE

The capture and analysis ImageFocus 4 software allows to save images in .jpg, .tif or .bmp formats as well as .avi format videos. Images can be annotated and measurements can be performed in live or captured images. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. A Mac OS version is also available. Free updates can be downloaded from our website

For full microscope specifications and accessories see chapter 1: Biological microscopes

MODELS 2.9 BB.4205 3.4 BB.4225 BB.4245 3.4 BB.4255 3.4 BB.4267 4.1 4.1 BB.4269

BB.4225 / BB.4245 /BB.4255

340 (h) x 155 (w) x 230 mm (d) | 3.4 kg BB.4267 / BB.4269

with built-in rechargeable batteries for corded



















and cordless use





digital microscopes with built-in 5.0 MP USB-2.0 camera

The versatile and evolutive bScope® microscopes are well-equipped and intensively used in universities, small to mid-sized laboratories and for veterinary applications

The bScope® comes with WF 10x/20 mm eyepieces and is available in binocular models. Complete with E-plan IOS and Plan IOS infinity corrected objectives for brightfield observations. Also EPLPHi IOS and PLPHi IOS infinity corrected objectives for phase contrast observations













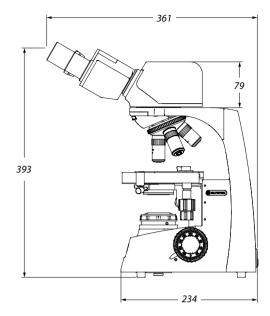


oscope

BS.1157-PLi 409 (h) x 195 (w) x 235 (d) | 7.1 kg

HIGHLIGHTS

- Binocular model
- Integrated 5.0 MP CMOS color USB.2 camera
- 2592 x 1944 pixels
- 7 frames per second (2592 x 1944 pixels)
- 27 frames per second (1280 x 960 pixels)
- 10 Years warranty (2 years on camera)



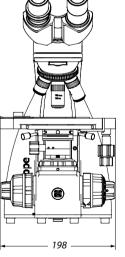
SPECIFICATIONS

CAMERA

The digital bScope microscopes are equipped with a 5.0 MP 1/2.5 inch CMOS USB-2.0 camera, 24 bits color depth, 7 frames per second (2592 x 1944 pixels) or 27 frames per second (1280 x 960 pixels). Dynamic range is 76 db and signal/noise ratio 41 db. Supplied with ImageFocus Alpha software, USB-2.0 cable and a micrometer 1mm/100 calibration slide

SOFTWARE

The capture and analysis ImageFocus Alpha software allows to save images in .jpg, .tif, .bmp or .dicom formats as well as .avi format videos. Measurements and annotations can be done on live or captured images. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. A Mac OS version is also available. Free updates can be downloaded from our website. For full microscope specifications and accessories see chapter 4: Biological microscopes



MODELS	Binocular head	HWF 10x/20 mm eyepieces	Quintuple nosepiece E-plan IOS 4/10/S40/S100x	Quintuple nosepiece plan IOS 4/10/S40/S100x	Quintuple nosepiece E-plan phase IOS 10/20/ S40/S100x	Quintuple nosepiece plan phase IOS 10/20/S40/S100x	Köhler NeoLED™
BS.1157-EPLi	•	•	•				
BS.1157-PLi	•	•		•			•
BS.1157-EPLPHi	•	•	•		•		•
BS.1157-PLPHi	•	•					•

All models can optionally be supplied with three AA rechargeable batteries

HIGHLIGHTS

- MonoZoom stand-alone digital microscope
- Zoom from 0.7x up to 5x
- 105 mm working distance
- 170 mm working distance with 0.5x lens
- **Built-in incident LED ring light**
- Built-in 1080p 2 MP HD camera
- HD 11.6 inch screen, -5° to 15°
- Built-in mouse driven on-screen software
- Conveniently build-in capture button
- Removable 32 GB memory stick
- Metal stand
- 3 years warranty



Adjustable screen

MZ.5000

digital macrozoom

MACROZOOMS

The digital MacroZoom microscope is built around one 0.7 to 5x zoom objective and enables inspection of objects directly on an 11.6" LCD screen, -5° to 15° inclination. This kind of microscope is well-suited for inspection and quality control departments

The digital MacroZoom is equipped with a built-in full High Definition 1080p camera which can deliver up to 60 images per second and is connected either to the supplied and attached 11.6" screen or an external stand-alone HD screen



MZ.5000







MZ series







SPECIFICATIONS

CENTRAL ZOOM OBJECTIVE

The Digital MacroZoom MZ.5000 features a single zoom objective with a 0.7 to 5x zoom magnification. Zoom adjustment engravings on 1, 1.5, 2, 3, 4 and 5x. The working distance is 105 mm. Supplied with a 0.5x additional lens with a working distance of 170 mm

STAND

The Central Zoom Objective with attached screen and LED ring light is mounted on a rack and pinion system that sits on a large 320 x 260 mm metal stand. Travel range is 225 mm

ILLUMINATION

A supplied 5,500 K LED ring light with 56 LED's can be mounted under the microscope body. The intensity is adjustable

BUILT-IN CAMERA

Built-in HD 1080p high definition 2 MP CMOS high speed camera, 1920 x 1080 pixels, 60 fps with attached 11.6" screen. The standard field of view is 29.8 to 4.18 and with the 0.5x additional lens from 59 to 8.35. The camera has one HDMI output that can be connected either to the attached screen or to an external HD screen

Two other USB ports accept the supplied 32 GB USB memory stick (up to 128 GB) and a supplied wireless mouse that drives the built-in on-screen software. The operator can also take and save images to the SD card by pressing on a capture button at the right side of microscope body

BUILT-IN SOFTWARE

The built-in on-screen software is mouse driven and features functions such as Capture image, Freeze image, Automatic white balance, Automatic exposition, File manager, Grids and camera settings such as exposure time, gain, saturation, contrast, sharpness, HDR

MZ.5000

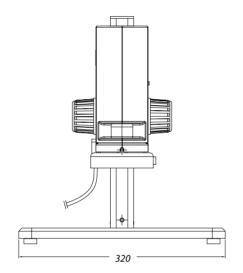
445/635 (h) x 320 (w) x 260 mm (d) | 4.6 kg

Supplied with 32 GB memory stick, mouse, short HDMI cable for attached screen, external 100-240 Vac / 12Vdc / 3 A power supply

352.5 338 39 25 260

Measurement functions are also available from the software

such as line, area, angle. Images are saved in .jpg format and



how to match

camera resolution

In microscopy, the image of the sample under observation is projected by the optical components of the microscope (objective lenses, eyepiece lenses, intermediate lens or camera relay lenses) onto the surface of a camera sensor or the retina of a human eye

Not the total amount of pixels - which basically determines the field of view of the camera image - is primordial but

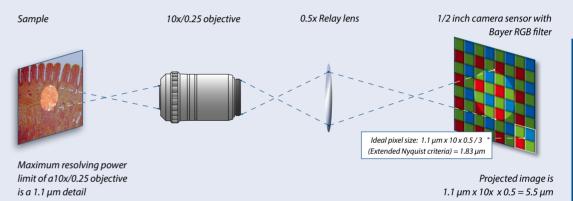
a more important specification is the pixel size of the camera sensor. What might be astonishing to know about digital resolution of camera's is the fact, that the higher the magnification, the fewer pixels the chip of a camera needs!

TECHNICAL

FACTS

To optimize the transfer of the details of the sample (resolving power) to the camer]] a, the pixel size of the photodiodes of the camera sensor is a key element

EXAMPLE OF A 10X/0.25 OBJECTIVE WITH 1/2 INCH CAMERA SYSTEM



MAXIMUM AND OPTIMUM PIXEL SIZE REQUIREMENTS:

Obj. Magn.	NA	Resolving power ⁽¹⁾ (µm)	Projected size (μm)	Projected size with 0.5x lens (μm)	Maximum (2) camera pixel size (µm)	Optimum (2) (3) camera pixel size (µm)
1x	(0.04)	6.90	6.90	3.45	1.72	1.15
2x	(0.06)	4.60	9.20	4.60	2.30	1.53
4x	(0.10)	2.80	11.2	5.60	2.80	1.86
10x	(0.25)	1.10	11.0	5.50	2.75	1.83
20x	(0.40)	0.69	13.8	6.90	3.45	2.30
40x	(0.65)	0.42	16.8	8.40	4.20	2.80
60x	(0.80)	0.34	20.4	10.2	5.10	2.40
100x	(1.25)	0.22	22.0	11.0	5.50	3.67

- (1) Resolving power of the objectives: $r = 1.22 \cdot \lambda / (NA \ Objective + NA \ Condenser)$. With NA = numerical aperture, $\lambda = wavelength$ and r = optical resolving power. The resolving power limits are based on various theoretical calculations. Low specimen contrast, improper or low illumination conditions, etc, may serve to lower resolving power limits, more often than not, the real-maximum values are not realized in practice
- (2) The Nyquist criterion states that the maximum camera pixel size can't exceed half of the resolving limit of the objective. For high resolution images, the Nyquist criterion is even extended to 2.5 to 3 pixels per detail and thus the optimum camera pixel size (3) is calculated as maximum 1/3 of the resolving limit of the objective
- (3) Although smaller pixel size of photodiodes of the camera sensor improve the resolution, smaller pixel sizes lower signal to noise ratios, lower the dynamic range and collect less light! Binning techniques can compensate for lower signal to noise ratios



digital WiFi camera with 1/2.5 inch CMOS sensor

The CMEX-WiFi 5 camera is equipped with a 5.0 MP CMOS sensor with 12 bits grayscale conversion and a 24 bits color rendering

The CMEX camera streams H.264 encoded high resolution images simultaneously to several WiFi enabled smartphones, tablets or computers with iOS, Android or Windows operating systems

Power supply through USB charger or computer USB port. Standard C-mount mounting

Adding a WiFi camera to your microscope is ideal for wireless sharing/viewing of microscope images. Ideal for demonstrations where remote viewing is needed

Android app for this camera is supplied on cd-rom and www.euromex.com. IOS app can be downloaded from the App store (free of charge). ImageFocus Alpha software can be used by means of WiFi on PC's and Macs

The camera is powered by the included USB charger or a computers USB port. Standard 0.45x C-mount objective is included

MODEL	Sensor	Sensor size (inches)	Pixels size (μm)	Resolutions	Grayscale conversion	Color rendering	-	•	Sensitivity V/lux-sec	Product number
CMEX-WiFi 5	CMOS	1/2.5"	2.2 x 2.2	1280 x 720	12 bits	24 bits	43	61	1.0	DC. 5000-WiFi

The CMEX-WiFi 5 camera is supplied in a box with USB-2.0 cable, 30.0 and 30.5 mm adapters to use with stereo microscopes, and a 0.45x C-mount objective



CMEX USB-2.0 cameras

with fast CMOS sensor

The CMEX-2f, CMEX-5f and CMEX-12f are equipped with a fast CMOS sensor. The CMEX cameras are equipped with USB-2.0 data interface and supplied with ImageFocus Plus software

Besides capturing images and videos, the software allows measurements on still and live images and annotations on captured images. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. A Mac OS version is also available. Free updates can be downloaded from our website

MODELS	Number of pixels (MP)	Sensor	Pixels size (μm)	Resolutions	Max. frames (p/sec)	Grayscale conversion	Color rendering	Dynamic (db)	Sensitivity V/lux- sec (at 550 nm)	Product number
CMEX-2f	2.0	1/2.9" CMOS	2.8 x 2.8	1920 x 1080	30	8 bits	24 bits	72	0.51	DC.2000f
CMEX-5f	5.0	1/2.8" CMOS	2.0 x 2.0	2560 x 1920 1600 x 1200	30 50	8 bits	24 bits	72	2.0	DC.5000f
CMEX-12f	12.0	1/2.3" CMOS	1.33 x 1.33	4000 x 3000 2592 x 1944	15 30	8 bits	24 bits	60	1.5	DC.12000f

The CMEX cameras are supplied with USB-2.0 cable, 30.0 and 30.5 mm to 23.2 mm conversion adapters for use with stereo microscopes, 1 mm/100 (10 µm/division) calibration slide. The cameras are supplied with a 0.45x C-mount objective



with CMOS sensor

USB CAMERAS

The CMEX-3 Pro. -5 Pro. -10 Pro and -18 Pro cameras are equipped with a 3.1, 5.1, 10 or 18 MP CMOS sensor with 12 bits grayscale conversion and a 24 bits color rendering. These cameras are equipped with a USB-3.0 data interface enabling fast frame rate and are supplied with ImageFocus Alpha software

Advanced CMEX USB-3.0 cameras

Besides capturing images and videos, the software allows measurements on still and live images and annotations on captured images. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. A 2 GB RAM 2.8 GHz computer and 17 inch display is recommended. A Mac OS version is available. Free updates can be downloaded from our website

ADVANCED

CAMERAS FOR

LIFE SCIENCE

FEATURED

CMEX-18 Pro

MODELS	Sensor	Sensor size (inch)	Pixels size (μm)	Exposure time	Resolutions	Max. frames (p/sec)	Signal/ Noise (db)	Dynamic (db)	Sensitivity V/lux-sec	Product number
CMEX-3 Pro	CMOS	1/3″	2.2 x 2.2	1 ms ~ 2000 ms	2048 x 1534 1024 x 770	28 53	39	100	1.9	DC.3000-PRO
CMEX-5 Pro	CMOS	1/2.5"	2.2 x 2.2	1 ms ~ 2000 ms	2560 x 1922 1270 x 960 640 x 480	14 39 100	39	68.	1.76	DC.5000-PRO
CMEX-10 Pro	CMOS	1/2.3"	1.67 x 1.67	1 ms ~ 2000 ms	3584 x 2746 1792 x 1372	8 25	35.5	63.5	0.31	DC. 10000-PRO
CMEX-18 Pro	CMOS	1/2.3″	1.25 x 1.25	1 ms ~ 2000 ms	4912 x 3684 2456 x 1842 1228 x 922	6 18 32	42	65	1.3	DC. 18000-PRO

The CMEX-3 Pro, -5 Pro, -10 Pro and -18 Pro cameras are supplied with USB-3.0 cable, 30.0 and 30.5 mm adapters to use with stereo microscopes, 1 mm/100 (10 µm/division) calibration slide. The CMEX-5 Pro, -10 Pro and -18 Pro are supplied with a 0.5x C-mount objective. The CMEX-3 Pro is supplied with a 0.37x C-mount objective

with scientific grade sCMOS sensor

The sCMEX-3, sCMEX-6 and sCMEX-20 cameras are equipped with a scientific grade back illuminated Sony sCMOS sensor with 16 bits grayscale conversion and an outstanding 36 bits color rendering. Suitable for brightfield, darkfield and fluorescence. The sCMEX cameras are equipped with a USB-3.0 data interface and supplied with ImageFocus Alpha software

Besides capturing images and videos, the software allows measurements on still and live images and annotations on captured images. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. Also compatible with Mac OS. PC requirements: Intel Core2 2.8 GHz or higher or equivalent, 2 GB memory, USB-3.0 port, 17 inch display. Free updates can be downloaded from our website

MODELS	Number of pixels (MP)	Sensor	Sensor size (inches)	Pixels size (μm)	Exposure time	Resolutions	Max. frames (p/sec)	Color rendering	Sensitivity V/lux-sec	Product number
sCMEX-3	3.1	sCMOS	1/2.8"	2.5 x 2.5	0.244 ~	2048 x 1536	50	36 bits	0.15	DC.3000s
					15000 ms	1920 x 1080	58			
sCMEX-6	6.3	sCMOS	1/1.8"	2.5 x 2.5	0.244 ~	3072 x 2048	30	36 bits	0.15	DC.6000s
					15000 ms	1536 x 1024	38			
sCMEX-20	20.0	sCMOS	1"	2.4 x 2.4	0.264 ~	5440 x 3648	15	36 bits	0.21	DC.20000s
					15000 ms	2736 x 1824	50		0.21	
						1824 x 1246	60		0.21	

The sCMEX cameras are supplied in a carton box with USB-2.0 cable, 30.0 and 30.5 mm to 23.2 mm conversion adapters for use with stereo microscopes, 1 mm/100 (10 μm/division) calibration slide. The DC.3000s and DC.6000s are supplied with a 0.5x objective and the DC.20000s is supplied with a 1.0x adapter

HD AND HD-AUTOFOCUS CAMERAS



High definition HD1080p

and 720p CMOS color cameras with HDMI and USB-2.0/3.0 interfaces

The Euromex UHD-4K, HD-Ultra, HD-Lite, HD-Mini and HD-Autofocus cameras offer the perfect solution to modern microscopy where real-time images are needed. These HD image quality cameras can be used with biological, metallurgical or stereo microscopes

The cameras are equipped with high sensitive sensors for low and intense light conditions and are also suitable for coaxial illumination and machine vision applications. The real-time images generated with this camera provide excellent color rendering with frame speeds up to 60 fps

STAND-ALONE MODE

To use these cameras you do not need a computer or have any computer knowledge. Most camera settings are done automatically and therefore these cameras are very user-friendly This results in faster, more flexible and compact working conditions. Simply connect the camera to a high definition dedicated 11.6" HD screen, TV-HD or HD-beamer with a HDMI

input and the system is ready to go. The UHD-4K camera can also be connected to a GbE ethernet and DHCP enabled network router and has also a WiFi interface. The mouse driven built-in software of the camera enables captured images and recorded videos* to be saved on the integrated SD memory card

HIGH DEFINITION

CAMERAS FOR

With the UHD-4K, HD-Ultra, HD-Lite and HD-Autofocus cameras, the captured images or recorded video's* can be very easily reviewed or replayed on the HD screen. The UHD-4K and HD-Ultra even offer a full range of measuring functions on live and captured images. The HD-Autofocus offers measuring functions on live image only * video function only available with UHD-4K (.mp4), HD-Ultra (.avi) and HD-Lite (.avi)cameras

COMPUTER CONTROLLED MODE

Users who want more camera controls and more functions can also connect the camera to a computer and benefit from the extensive functions of the Euromex ImageFocus software. It runs

HIGHLIGHTS

- UHD 2160p, HD 1080p or 720p high definition color cameras
- Real-time images directly on TV, monitor or beamer
- Stand-alone or computer controlled mode
- Built-in mouse-driven software and SD memory card
- C-mount interface
- HDMI, USB-2.0/3.0, GbE and WiFi interface(s)
- Autofocus model available
- Compatible with ImageFocus software

on Windows 7, 8 and 10, both 32 and 64 bits. Euromex supplies free software updates on www.euromex.com. Besides extended camera settings, the software can save images in JPG, TIFF or BMP formats and record videos in .avi format on the hard disk of the computer. The software offers different measurement functions on live and captured images and also full control over the camera parameters. Specific functions for fluorescence - such as histogram adjustments and combining captured fluorescence images - are also available with the ImageFocus software



VC.3036-HDS on stereo microscope

PACKAGE CONTENT

MODELS	UHD-4K	HD-Ultra	HD-Lite	HD-Mini	HD-Autofocus	HD-Pro
Software	ImageFocus Alpha	ImageFocus Plus	ImageFocus Plus			ImageFocus Alpha
Software languages	15 ⁽²⁾	6 ⁽¹⁾	6 ⁽¹⁾	English	15 ⁽²⁾	15 ⁽²⁾
Compatible	Win 7, 8 and 10 Mac OS	Win 7, 8 and 10 Mac OS	Win 7, 8 and 10 Mac OS			Win 7, 8 and 10 Mac OS
C-mount with objective	0.5x	0.37x	0.45x	0.37x	0.5x	0.37x
Interface(s)	•	•	•	Only HDMI	•	•
30 and 30.5 mm adapters	•	•	•	•	•	•
SD card	16 GB	8 GB	4 GB	16 GB	16 GB	16 GB
Cailbration slide 10mm/100	•	•	•	•	•	•
External power supply	12V 1A	12V 2A	12V 2A	12V 1A	12V 1A	12V 1A
Dimensions (w x d x h)	78 x 65 x 98	80 x 70 x 90	80 x 70 x 90	50 x 50 x 60	81 x 65 x 78	81 x 65 x 78
Weight (grams)	555	440	280	150	500	500
Product number	VC.3040	VC.3036	VC.3031	VC.3020	VC.3034	VC.3038
With 11.6" HD screen	VC.3040-HDS	VC.3036-HDS	VC.3031-HDS	VC.3020-HDS	VC.3034-HDS	VC.3038-HDS

⁽¹⁾ One language can be selected during initial installation of the ImageFocus Plus software: English, German, French, Dutch, Spanish and Russian

⁽²⁾ English, Catalan, French, German, Indonesian, Italian, Japanese, Korean, Polish, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish

ALL HD-CAMERAS

MODELS	UHD-4K	HD-Ultra	HD-Lite	HD-Mini	HD-Autofocus	HD-Pro HDMI
Sensor	Sony 4K	Sony	Aptina	Aptina	Sony	Sony
Format	1/1.8", HDTV 2160p	1/2.8", HDTV 1080p	1/2.5", HDTV 1080p	1/3", HDTV 720p	1/1.9", HDTV 1080p	1/2.8", HDTV 1080p
Pixels	3840 x 2160 ⁽¹⁾ HDMI 60 fps USB 30 fps	3264 x 1836 ⁽¹⁾ 1920 x 1080 ⁽²⁾ HDMI 60 fps USB 30 fps	2592 x 1944 ⁽¹⁾ 1920 x 1080 ⁽²⁾ HDMI 15 fps, USB 15fps	1280 x 720 ⁽¹⁾ 1280 x 720 ⁽²⁾ HDMI 30 fps	1920 x 1080 ⁽¹⁾ HDMI 60 fps	1920 x 1080 ⁽¹⁾ 1920 x 1080 ⁽²⁾ HDMI 60 fps, USB 26 fps
Pixel size	2.0 x 2.0 (μm)	2.8 x 2.8 (μm)	2.2 x 2.2 (μm)	3.75 x 3.75 (μm)	3.75 x 3.75 (μm)	2.9 x 2.9 (μm)
Video recording	2160p	1080p	1080p		1080p	1080p
/ideo output	HDMI, USB-3.0 ⁽⁵⁾ , GbE ethernet, WiFi ⁽⁵⁾	HDMI, USB-2.0	HDMI, USB-2.0	HDMI	HDMI, USB-C ⁽³⁾	HDMI, USB-2.0
Scan mode	Progressive	Progressive	Progressive	Progressive	Progressive	Progressive
Exposure	Automatic/ manual	Automatic/ manual	Automatic/ manual	Automatic/ manual	Automatic/ manual	Automatic/ manual
White balance	Automatic/ manual/ROI	Automatic/ manual	Automatic/ manual	Automatic/ manual	Automatic/ manual	Automatic/ manual/ROI
Sensitivity lux-sec	505 mV	510 mV	1 V	6.5 V	1.12 V (1/30s)	1.3 V (1/30s)
Color rendering (bits)	36	36	24	24	24	24
Signal/Noise (db)	44	55	40.5	44	50	38
Dynamic (db)		69	60	85	65	66
Storage	16 GB SD card (max. 32 GB)	8 GB SD card (max. 32 GB)	4 GB SD card (max. 32 GB)	16 GB SD card (max. 32 GB)	16 GB SD card (max. 32 GB)	16 GB SD card (max. 32 GB)
Camera buttons	on/off	on/off	on/off		on/off	on/off
Mounting	C-mount	C-mount	C-mount	C-mount	C-mount	C-mount
External power supply	100-240 Vac to 12Vdc/1A	100-240 Vac to 12Vdc/2A	100-240 Vac to 12Vdc/2A	100-240 Vac to 12Vdc/1A	100-240 Vac to 12Vdc/2A	100-240 Vac to 12Vdc/2A
Relative numidity	10-60 %	45-85 %	45-85 %	30-80 %	45-85%	30~80%
Temperature Operation Storage	-10 – 50° C -20 to 60° C	0 – 60° C -20 to 70° C	0 – 60° C -20 to 70° C	-10 – 40° C -20 to 60° C	−10-40° C -20°C to 60° C	-10~ 50° C -20°C to 60° (
Product number	VC.3040 VC.3040-HDS (4)	VC.3036 VC.3036-HDS (4)	VC.3031 VC.3031-HDS ⁽⁴⁾	VC.3020 VC.3020-HDS ⁽⁴⁾	VC.3034 VC.3034-HDS (4)	VC.3038 VC.3038-HDS

(1) capture mode (2) live view (3) USB-2.0 compatible (4) model with attached high definition screen (5) available from November 2019

BUILT-IN SOFTWARE FEATURES (HDMI MODE)

MODELS	UHD-4K	HD-Ultra	HD-Lite	HD-Mini	HD-Autofocus	HD-Pro HDM
Image capturing (JPEG)	3840 x 2160	3261 x 1840	2592 x 1944	1280x720	1920 x 1080	1920 x 1080
Video recording	3840 x 2160 MP4	1920 x 1080 AVI	1920 x 1080 AVI		1920 x 1080 ASF	1920 x 1080 ASF
Browse saved images	•	•	•		•	•
Browse saved video's	•	•	•		no	•
SD card storage	16 GB	8 GB	4 GB	16 GB	16 GB	16 GB
Mouse driven	•	•	•	•	•	•
Auto exposure	•	•	•	•	•	•
Exposure time	0.04 ~ 1000 ms	0.001s ~ 10 s	0.001s ~ 10 s	0.2 ~ 2000 ms	0.06 ~ 918 ms	0.036 ~ 8000 ms
Gain	•	•	•	•	•	•
RGB & white balance	•	•	•	•	•	•
Gamma	•	•	•	•	•	•
Sharpness	•	•	•	•	•	•
Noise reduction	3D algorithm	3D algorithm	3D algorithm	Standard	Standard	Standard
Saturation & contrast	•	•	•	•	•	•
Horiz. & vert. flip	•	•	•	•	•	•
Grids	cross/multi	cross/multi	multi	m ulti	multi	User define
Autofocus					•	
Compare function	•	•	•		•	•
Measurement functions	captured & live images	captured & live images			live image only	captured & live images
Calibration table	•	•			•	•
Line & free curve	•	•			•	•
Polygon & rectangle	•	•			•	•
Angle	•	•			•	•
Circle 3 points	•	•			•	•
Circle radius	•	•			•	•
Export function	CSV	CSV, Txt			CSV	CSV
Languages	5 (2)	8 (1)	8 (1)		5 (2)	5 ⁽²⁾
Product number	VC.3040 VC.3040-HDS	VC.3036 VC.3036-HDS	VC.3031 VC.3031-HDS	VC.3020 VC.3020-HDS	VC.3034 VC.3034-HDS	VC.3038 VC.3038-HD

⁽¹⁾ English, simplified Chinese, traditional Chinese, German, Italian, French, Japanese, Korean



⁽²⁾ English, Simplified Chinese, Traditional Chinese, Korean and Thai

TECHNICAL

FACTS

DC.20000i and DC.6000i

Cooled color camera

COOLED CAMERAS

with CCD or CMOS sensor

The Euromex 6 and 20 Megapixel Peltier cooled cameras are equipped with Peltier cooling elements that allow the camera to be used for fluorescence and other low light applications. These advanced and premium models are supplied with a USB-3.0 interface

All cameras are supplied with ImageFocus Alpha software. The software has specific functions for fluorescence like combining capture fluorescence images. Furthermore it allows capturing of images and videos, doing measurements and annotations, generating reports, live image stitching etc. Compatible with Windows 7, 8 and 10, both 32 and 64 bits configurations. A Mac OS version is also supplied (with a few differences in features)

MODELS	Number of pixels (MP)	Sensor	Pixel size (µm)	Resolutions	Max. frames (p/sec)	USB-3	Sensitivity @ 1/30 sec	Peltier cooling
DC.6000i	6	1" CCD	4.54 x 4.54	2748 x 2200 2748 x 1092	7.5 14	٠	880 mV	•
DC.20000i	20	1" CMOS	2.4 x 2.4	5440 x 3648 4096 x 2160 2736 x 1824 1824 x 1216	5 10 15 30	•	462 mV	·

about

field of view

Field of view (FOV) is the visible area when looking through the microscope eyepiece (eyepiece FOV) or camera (camera FOV) and is usually expressed as a diameter

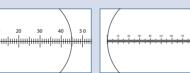
CALCULATING FOV OF AN EYEPIECE

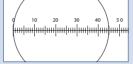
The FOV through an eyepiece is equal to:



Field number (FN) is usually engraved on the eyepiece as a figure next to the magnification and expressed in mm, e.g. WF 10x/18. A 10x/18 eyepiece with a 40x objective will have a FOV = 18 mm / 40 = 0.45 mm or 450 nm

450 nm FOV with 10x/18 eyepiece and S40x objective



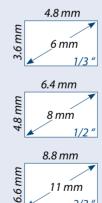


Micrometer stage 1 mm/100 Micrometer stage 1 mm/100

FIELD OF VIEW WITH CAMERA

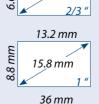
Most commercially available microscope digital cameras use 1/3, 1/2- or 2/3-inch rectangular sensors. A few will use a 1 inch camera sensor

As a consequence, a rectangular camera sensor cannot capture the circular FOV that exits from a eyepiece, microscope third tube or photo port

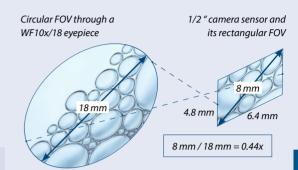


900 nm FOV with 10x/18

eyepiece and S20x objective



EYEPIECE VERSUS CAMERA FOV



Furthermore, the circular eyepiece FOV is much larger than the camera FOV and thus the microscope FOV must be "reduced" with a so-called "relay" lens or "photo-adapter" to fit the camera FOV. However - in order to avoid vignetting (dark shadows in the corners of an image), the circular microscope FOV must just be projected outside the image sensor area. Subsequently the camera FOV will always be smaller than the microscope FOV by 50 to 60%

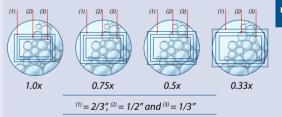


Figure: different camera sensor sizes (2/3, 1/2, 1/3 inch) with different "demagnifying" lenses (C-mount photo-adapters) 0.33x, 0.50x, 0,75x and 1.0x

IN ORDER TO OBTAIN THE DESIRED FIELD OF VIEW WITHOUT VIGNETTING USE:

- a 0.33 x photo adapter for cameras with a 1/3" sensor
- a 0.50 x photo adapter for cameras with a 1/2" sensor
- a 0.75 photo adapters for cameras with a 2/3" sensor
- a 1.0x or 1.2x photo adapters for cameras with a 1" or larger camera sensor



HIGHLIGHTS

- 10.1" Tablet with microscope camera
- 1280 x 800 pixels HD touch screen
- Windows 10 Home
- ImageFocus Plus software for PC
- ImageFocus Alpha for WiFi enabled PC and Android devices
- Tablet can be fully detached from camera
- Including keyboard
- The snap-on keyboard uses a magnetic docking system



SPECIFICATIONS

Processor	Quad Core 1.92 GHz with HD graphics processor
Screen	10.1 inch, 1280 x 800 (WGXA) touchscreen, 16:10, LED backlight
Memory	2 GB DDR RAM, 2 MB cache
Storage	32 GB Flash HDD, micro SD/SDHC up to 64 GB
Webcam	2 MP, 1600 x 1200 pixels front and rear cameras
Connectivity	Micro USB 2.0, WiFi 802.11 b/g/n and Bluetooth 4.0
Audio	Stereo with 3.5 mm audio jack, internal microphone and speaker
Battery	Lithium
Housing	246.9 x 174.2 x 9.4 mm (tablet), 246.9 x 174.2 x 8.2 mm (keyboard)
Weight	588 grams (tablet), 551 grams (keyboard)
System	Windows 10 Home
Supplied with	Keyboard-docking station

Specifications can be changed by Euromex microscopen by without prior notice

MODELS	Camera (MP)	Sensor size	Resolution	Pixels size (μm)	ADC	Color rendering	Dynamic (db)	Sensitivity V/lux-sec	Interface	Product number
ProPad-2	2.1	1/2.9"	1920 x 1080	2.8 x 2.8	12 bits	24 bits		0.51	₩ 2.0	PP.2000f
ProPad-5	5.1	1/2.8"	2592 x 1920	2.0 x 2.0	12 bits	24 bits	72 db	2.0	₩ 2.0	PP.5000f
ProPad-12	12.0	1/2.3"	4072 x 3176	1.33 x 1.33	8 bits	24 bits	60 db		₩ 2.0	PP.12000f
ProPad-WiFi	5.0	1/2.5"	1280 x 720	2.2 x 2.2	12 bits	24 bits	61 db	1.0	#	PP.5000-WiFi

All ProPad models are supplied with a C-mount objective that fits the standard 23.2 mm trinocular tubes. The PP.2000f, PP.5000f and PP.12000f are supplied with ImageFocus Plus software. The PP.5000-WiFi is supplied with ImageFocus Alpha. Only suitable for straight photo tubes

SOFTWARE

The software is compatible with all cameras mentioned in table below. Besides live imaging the software captures images in .jpeq, .tif, .bmp or .dicom formats or video recording in .avi format

IMAGE FOCUS 4	
DC.1300c	

IMAGE FOCUS PLUS		
DC.2000f	VC.3036	
DC.5000f	VC.3031	
DC.12000f		

IMAGE FOO	CUS ALPHA
DC.3000-Pro	DC.5000-WiFi
DC.5000-Pro	DC.3000s
DC.10000-Pro	DC.6000s
DC.18000-Pro	DC.20000s
VC.3038	

IMAGE STITCHING

Image stitching is the process of combining multiple images with overlapping fields of view to produce one image

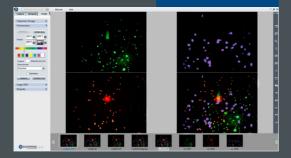
EXTENDED DEPTH OF FOCUS

"The extended depth of focus" function in the ImageFocus Alpha software or "stacking software, allows to combine a number of digital images of a object, focused at different focus planes, into one final image with much greater depth of field (see illustration below)





FREE UPDATES **AVAILABLE ON EUROMEX.COM**





ImageFocus 4

software

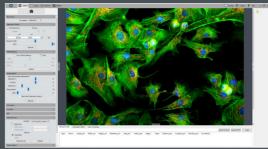
ImageFocus 4 has a wide range of functions:

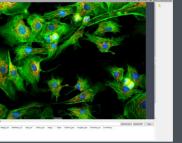
- Measurements can be done on still and live image
- Images can be saved in .jpg, .tif, .bmp or .dicom formats as well as .avi format videos
- The brightness, contrast and saturation of captured images can be adjusted
- Camera parameters for exposure time, white balance and color control are easily accessible
- The software also has specific functions for fluorescence such as combining captured fluorescence images
- · Compatible with Windows 7, 8 and 10, both 32 and 64 bits configuration. A Mac OS Light version is also available for capturing images*
- PC requirements: Intel Core2 2.8 GHz or higher or equivalent, 2GB memory or more, 17" screen
- * Mac version not available for VC Series

One language can be selected during initial installation of the ImageFocus 4 software: English, German, French, Dutch, Spanish and Russian











ImageFocus Plus

software

ImageFocus Plus has a wide range of functions:

- Measurements can be done on still and live image
- Images can be saved in .jpg, .tif, .bmp or .dicom formats as well as .avi and mpeg-4 format videos
- The brightness, contrast and saturation of captured images can be adjusted
- Camera parameters for exposure time, white balance and color control are easily accessible
- The software also has specific functions for fluorescence such as combining captured fluorescence images
- Compatible with Windows 7, 8 and 10, both 32 and 64 bits configuration. A Mac OS version is also available
- PC requirements: Intel Core2 2.8 GHz or higher or equivalent, 2GB memory or more, 17" screen

ImageFocus Plus software features English, German, French, Dutch, Spanish and Russian



ImageFocus Alpha

software

ImageFocus Alpha has a wide range of functions:

- Measuring, segmentation & counting, stichting of images, extended depth of focus, etc
- Images can be saved in .jpg, .tif, .bmp or .dicom formats as well as .avi format videos
- The brightness, contrast and saturation of captured images can be adjusted
- Camera parameters for exposure time, white balance and color control are easily accessible
- The software also has specific functions for fluorescence such as combining captured fluorescence images
- Compatible with Windows 7, 8 and 10, both 32 and 64 bits configuration. A Mac OS version is also supplied (with a few differences in features)
- PC requirements: Intel Core2 2.8 GHz or higher or equivalent, 2GB memory or more, 17" screen

One language can be selected during initial installation of the ImageFocus Alpha software English, Catalan, French, German, Indonesian, Italian, Japanese, Korean, Polish, Russian, Simplified Chinese, Spanish, Thai, Traditional Chinese, Turkish





ADAPTERS





Digital singe lens reflex camera with a APS-C sensor can be mounted on a standard 23.2 mm trinocular tube Choose the universal DC.5130 adapter with built-in 2x objective, together with a brand-specific T-2 adapter

AE.5130	Universal SLR camera adapter for 23.2 mm tube
	with built-in 2x magnification lens. Needs T2
	adapter
AE.5120-2	Standard 23.2 mm diameter tube for Oxion

photo port (x)

T2 adapter for Nikon D digital SLR cameras AE.5025 AE.5040 T2 adapter for Canon EOS digital SLR cameras

Other T2 adapters on request

DC.1324

STANDARD PLUG & PLAY

C-mount adapters for standard Ø 23.2 mm tube

DC.1359 C-mount adapter with 1x lens, fixed focal length and short barrel, for standard 23.2 mm tube and 1 inch camera

DC.1327 C-mount adapter with 0.75x objective for 2/3" camera

DC.1324 C-mount adapter with 0.45x objective for 1/2" camera

DC.1353 C-mount adapter with 0.37x objective, fixed focal length and short barrel*. For 1/3" camera

DC.1355 C-mount adapter with 0.50x objective, fixed focal length and short barrel*. For 1/2" camera

DC.1357 C-mount adapter with 0.75x objective, fixed focal length and short barrel*. For 2/3" camera

DC.1330 30 mm to 23.2 mm conversion adapters

DC.1335 30.5 mm to 23.2 mm conversion adapters





DC.1355 DC.1330 / DC.1335

PHOTO PORT ADAPTERS

Suitable for Euromex microscopes with a photo port such as Oxion, NexiusZoom and StereoBlue

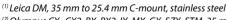
OX.9810	C-mount adapter with 1x magnification for
	1" cameras

OX.9833 C-mount adapter with 0.33x objective for Oxion microscopes and 1/3" cameras

OX.9850 C-mount adapter with 0.5x objective for Oxion and Oxion Inverso microscopes and 1/2" cameras NZ.9833 C-mount adapter with 0.33x objective for NexiusZoom microscopes and 1/3" cameras

NZ.9850 C-mount adapter with 0.5x objective for NexiusZoom microscopes and 1/2" cameras

SB.9850 C-mount adapter with 0.5x objective for StereoBlue microscopes and 1/2" cameras



SMZ15000, 38 mm to 25.4 mm C-mount, stainless steel

adapter guide

microscope and camera

another microscope brand, see adapter references below:

1/3 inch camera

AE.9835-L (0.35x)

AE.9835-O (0.35x)

AE.9835-Z (0.35x)

AE.9835-N (0.35x)

⁽²⁾ Olympus CX , CX2, BX, BX2, IX, MX, GX, SZX, STM, 35 mm to 25.4 mm C-mount, anodized aluminum

Most Euromex cameras are supplied with (a) standard plug & play adapter(s), which means that it can be

These microscopes need an additional adapter. See next page. Do you want to connect one of our cameras to

1/2 inch camera

AE.9855-L (0.55x)

AE.9850-O (0.50x)

AE.9850-Z (0.50x)

AE.9850-ZA (0.50x)

AE.9855-N (0.55x)

connected to any Euromex microscope, except for the Oxion and Oxion Inverso series.

(3) Zeiss PrimoStar, PrimoStar Vert, 30 mm to 25.4 mm C-mount, anodized aluminum

(4) Zeiss 60N-C, 60N-T2 photo ports of Axio examiner, Axio Imager, Axio Lab, Axio Observer, Axio Scope, Axio Zoom, Stemy 508 and SteREO Discovery (5) Nikon E100, E200, 50i, 55i, 80i, 90i, Ni series, Ti Series, SMZ800,SMZ1000,

AE.9835-L



1 inch camera

AE.9810-L (1x)

AE.9812-L (1.2x)

AE.9810-O (1x) AE.9812-O (1.2x)

AE.9810-Z (1x) AE.9812-Z (1.2x)

AE.9810-ZA (1x)

AE.9812-ZA (1.2x)

AE.9810-N (1x)

AE.9812-N (1.2x)

FOR ALL MICROSCOPE

CAMERAS

^{-Moun}t Adapter 0.5X

NZ.9850

2/3 inch camera

AE.9870-L (0.70x)

AE.9863-O (0.63x)

AE.9880-O (0.80x)

AE.9865-Z (0.65x)

AE.9863-ZA (0.63x)

AE.9880-ZA (0.80x)

AE.9870-N (0.70x)

AE.9880-N (0.80x)



MODELS

Leica (1)

Zeiss (3)

Zeiss ZA (4)

Nikon (5)

Olympus (2)

^{*}for increased light efficiency