

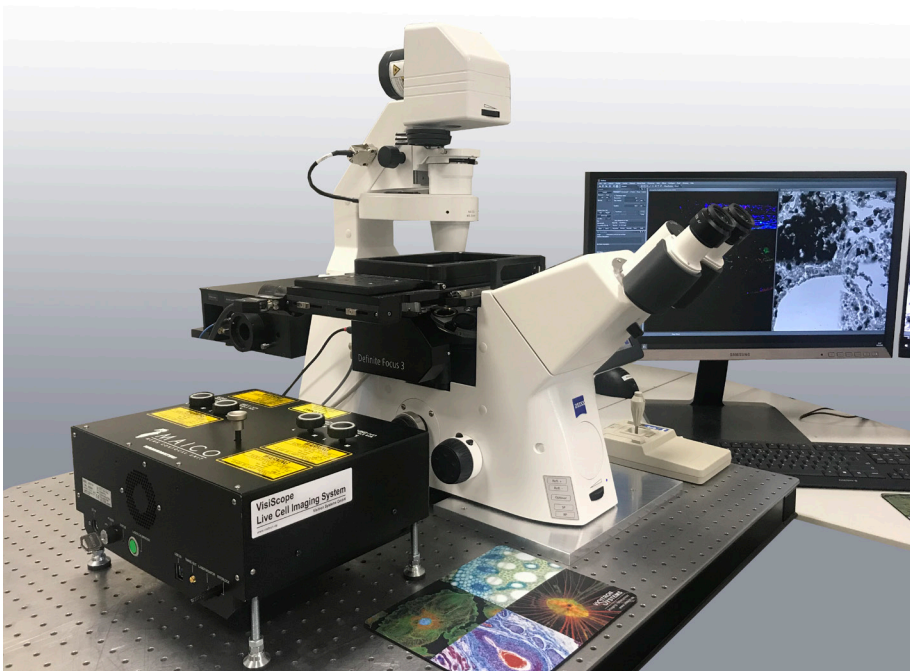
VisiScope Confocal System based on Hamamatsu MAICO MEMS Scanner

Making confocal imaging more accessible

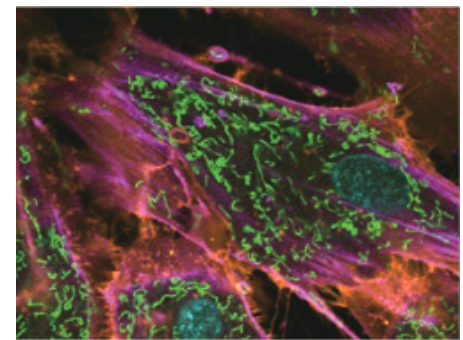
MAICO® MEMS confocal unit is a confocal unit easily installed on your inverted microscope to achieve confocal fluorescence imaging. This compact, bench-top unit, does not require other devices such as cameras, filters or lasers. As an entry-level model, or as a sub-model of a high-end confocal fluorescence microscope, MAICO® makes confocal fluorescence imaging more accessible.

VisiScope Confocal

MAICO MEMS Point Scanner



VisiScope MAICO confocal with Zeiss Observer microscope and VisiView Software

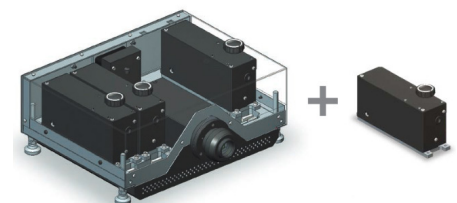


Superimposed four-color fluorescence image in pseudo-color

Our modular subunit structure makes adding extra channels easy

MAICO® has a unique subunit structure which contains all the necessary components for each fluorescence band excitation and detection in a single unit. By adopting the subunit structure you can, for example, select a single fluorescence band when you purchase your first unit. You can then add more imaging channels as your research progresses. In addition, MAICO®'s elegant design allows on-site installation of subunit, therefore avoiding disruption to your research.

MAICO® supports single channel observation as well as up to four multi-channel (405 nm, 488 nm, 561 nm, and 638 nm) simultaneous excitation and observation.



The subunit contains all the necessary components for single band fluorescence excitation and detection, including a laser source, a pinhole, and a detector.



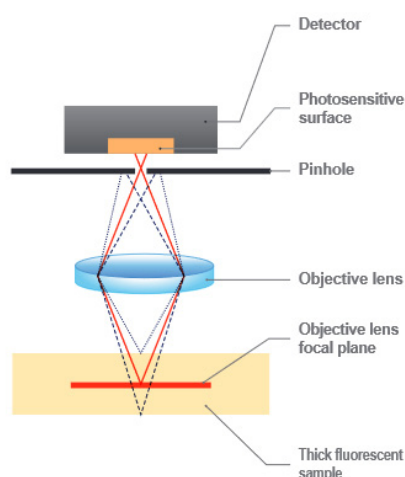
VisiScope Confocal

MAICO MEMS Point Scanner

VisiScope Confocal System based on Hamamatsu MAICO MEMS Scanner

Conventional confocal optics

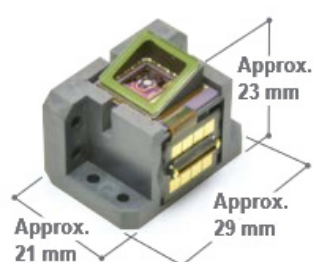
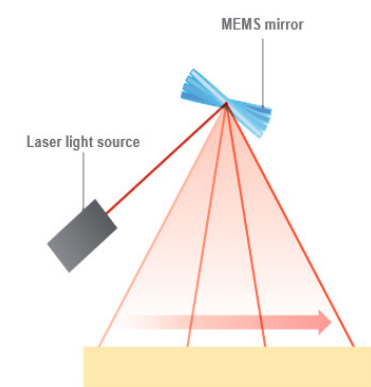
MAICO® was designed to comply to the conventional confocal optics, which has a long history, using a spot scanning device and pinholes to acquire optical sectioning images. When imaging thick fluorescence samples, only the fluorescence emitted from the focal plane of the objective passes through the pinholes to the detector, while fluorescence emitted from further away from the focal plane is blocked. It detects quantitative, reproducible and reliable signals. It also acquires high contrast images without the need for image processing techniques, such as deconvolution.



Type number	C15890 series	
Maximum effective field of view	8.0 mm × 6.0 mm	
Maximum number of pixels	1280 (H) × 960 (V)	
Image size	1280 (H) × 960 (V)	
	1280 (H) × 480 (V)	
	1280 (H) × 240 (V)	
Frame rate (Typ.)	960 scanning lines	19 frames/s
	480 scanning lines	38 frames/s
	240 scanning lines	76 frames/s
Zoom function	1×, 2×	
Excitation laser*1	405 nm, 488 nm, 561 nm, 638 nm	
Laser class	Class 3R	
Detection wavelength	at 405 nm excitation	425 nm to 465 nm
	at 488 nm excitation	510 nm to 540 nm
	at 561 nm excitation	580 nm to 619 nm
	at 638 nm excitation	660 nm to 730 nm
Detector*2	PMT, high-sensitivity GaAsP PMT	
Digital output	12 bit	
Image acquisition mode	Single channel measurement, multiple channel sequential measurement (frame by frame), multiple channel simultaneous measurement (up to 4 channels)	
Pinhole*3	3 manual selections (large/medium/small) for each wavelength	
Compatible objective lens*4	Magnification 20 to 100 times	
Interface	USB 3.0	
Output trigger connector	SMA	
Lens mount	C-mount	
Power consumption	90 VA	
Ambient operating temperature	+18 °C to +28 °C	
Ambient operating humidity	30 % to 80 % (with no condensation)	
Ambient storage temperature	-10 °C to +50 °C	
Ambient storage humidity	85 % (with no condensation)	

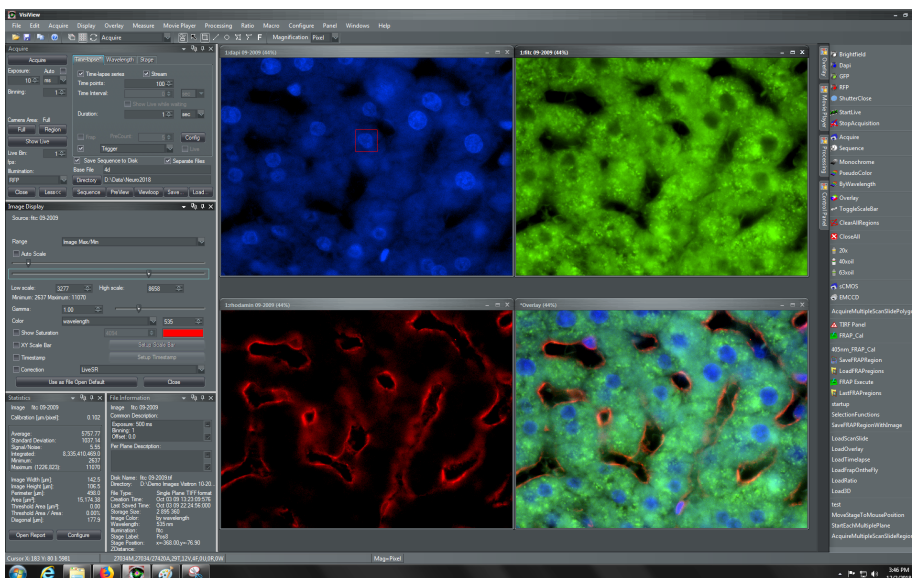
High-speed scanning with MEMS mirror

We adopted our 29 kHz resonant type high-speed MEMS* mirror as a spot scanning device. The MEMS mirror allows for a high-speed scan up to 76 frames/s and can be used for high-speed phenomena such as Ca²⁺ dynamics. The high-speed resonant scanning system reduces laser irradiation time, which enables low phototoxicity, low photo-bleaching and high-efficiency observation of live cells as well as fixed samples. High-speed scanning allows for comfortable observation at high resolution with minimal display delay when searching for and focusing on samples ultimode LASER light source.



VisiView® is a high performance imaging software from Visiutron Systems GmbH for BioMedical applications. The software is designed as an integrated imaging software which includes comprehensive microscope control, unexpected control of peripheral device, image acquisition, analysis and documentation. Its multitasking ability supports realtime image handling and up to 6D multidimensional acquisition. The VisiView® software represents the philosophy of simple operation and seamless integration of applied standards. It fully supports the new Hamamatsu MAICO MEMS confocal for single or simultaneous multichannel.

VisiScope Confocal MAICO MEMS VisiView® Imaging Software



Time-Lapse Acquisition

Acquire changes in living specimens over time at defined intervals and display the image sequence as a movie to show cellular dynamics. The image sequence will be saved in single TIFF, multifile stack or .nd format.

Single or Multichannel Acquisition

The MDA-Multi Dimensional Acquisition gives you a comprehensive view of your multi dimensional experiment. This means a free combination of z-stack (focus), different wavelengths (channel), time points and different xy stage positions in one sequence acquisition (6D-imaging).

Control of Automated Microscopes

The scope control allows you to control all motorized microscopes from any vendor. We have easy access to any illumination component like filter cube changer, shutter or condenser control. The objectives can be easily selected and calibrated. The focus control allows both the automatic generation of Z-stack images and the software autofocus readjustment to keep your cells in best focus.

