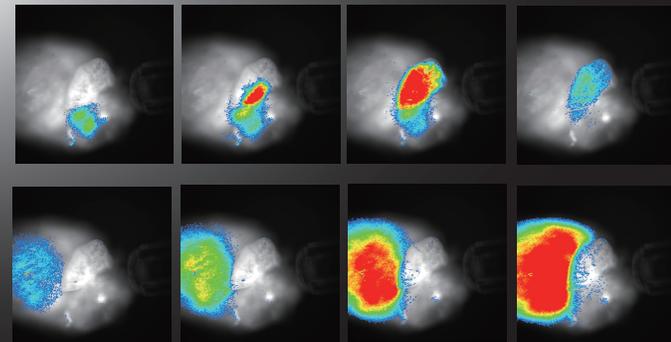
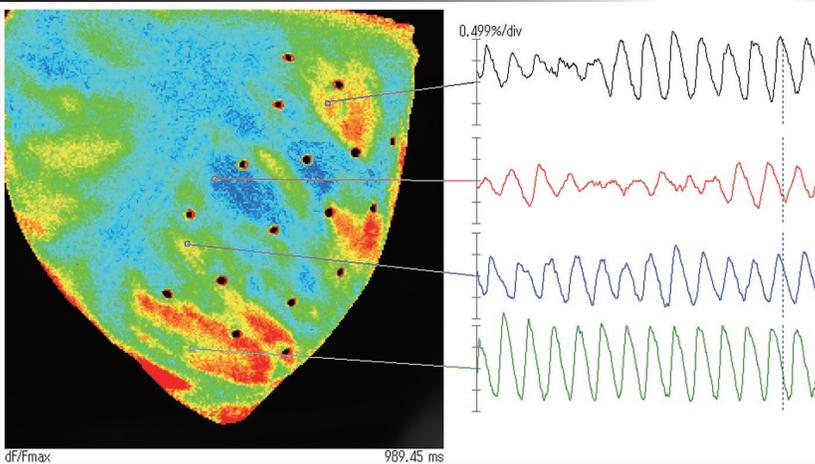
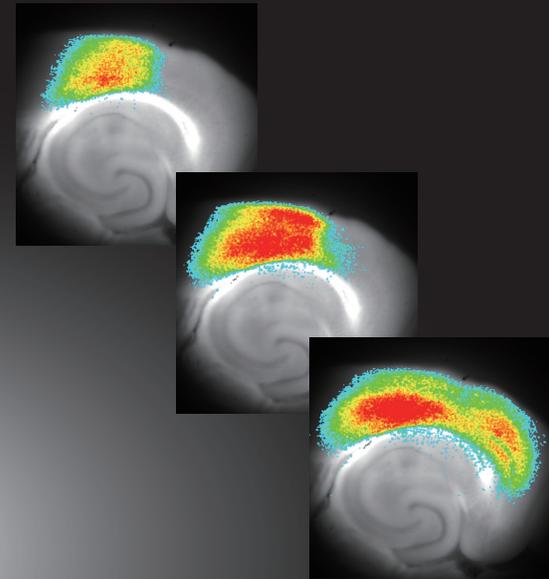
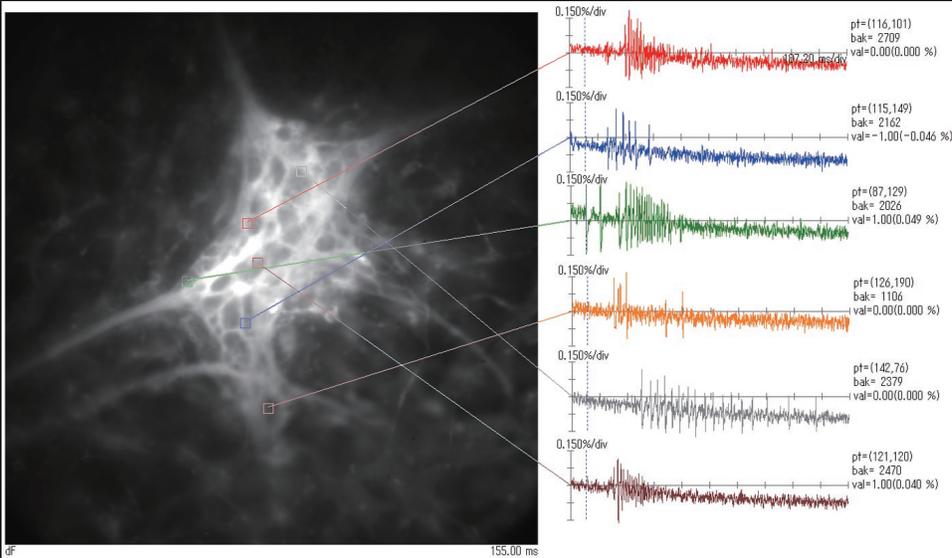


NEW MiCAM05 and MiCAM03



Introducing new MiCAM

Brainvision's new **MiCAM05-N256** and **MiCAM03-N256** are available as the upgraded versions of the previous **MiCAM ULTIMA** and **MiCAM02**.

While inheriting the basic performance features of the MiCAM Ultima and MiCAM02, new features have been added in the MiCAM05-N256 and MiCAM03-N256. New features include **higher spatial resolution** using a newly developed CMOS camera head, **long-term recording ability** using high speed data transfer, **synchronized imaging of up to 4 cameras**, **expanded functionality**, and **improved compatibility with external equipment**.

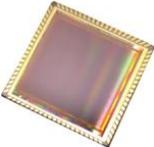
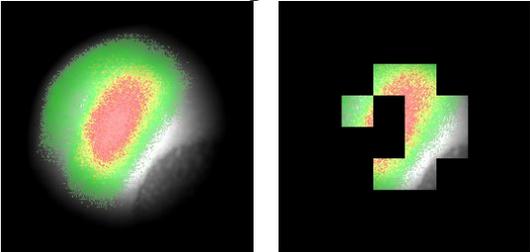
MiCAM05-N256



MiCAM03-N256



New Features & Benefits

New Features	Benefits
<p>Large image sensor and large pixels</p> <p>Active Area size: 17.6mmx17.6mm Pixel size : 69µmx69µm</p> 	<p>Using a sensor having large pixels makes it easy to increase the amount of light captured by one pixel and optimize S/N ratios.</p>
<p>High spatial resolution, high frame rates, and high S/N ratios</p> <p>Number of Pixels: 256x256 pixels Maximum Frame Rate: 1,818 fps (@ 256x256 pixels) Dynamic range: 71dB</p>	<p>The overall performance has been improved in a balanced manner. This includes maximum frame rate, spatial resolution, and S/N ratios, all of which are important factors for high-speed membrane potential imaging.</p>
<p>ROI readout for higher frame rates</p>  <p>All pixels readout(256x256) multiple ROI readout (32x32x9 blocks)</p>	<p>Preset partial readout setting and multiple ROI setting can be selected, and as a result it is possible to achieve higher frame rates.</p> <p>For example, ultra high frame rates such 20,000 fps @ 32x32 pixels is possible.</p>
<p>Direct data saving and long-term data acquisition with USB3.0 high-speed data transfer</p>	<p>It is possible to save data directly to HDD or SSD, and long-term recordings of several minutes up to a few hours can be achieved, regardless of the RAM capacity.</p>
<p>Wide dynamic range mode and high sensitivity mode by adjustable well depth</p> <p>Wide dynamic range mode (D-mode): 3,000,000e- High sensitivity mode (S-mode) : 600,000e-</p>	<p>D-mode is used for tissue samples with high fluorescence light intensity, and S-mode is used for cultured cell monolayers, or preps with low fluorescence light intensity.</p> <p>This adjustable well depth makes it possible to image a variety of biological samples using a single camera.</p>
<p>Continuous output of light intensity (for MiCAM05)</p>	<p>Designed to output light intensity changes of up to eight user selected pixels via eight BNC connections. Waveforms of fluorescence change can be monitored and output before, during, and after data acquisition.</p>
<p>Up to four cameras can easily be connected and used in a completely synchronized multi-camera system (for MiCAM05)</p>	<p>This allows for simultaneous imaging of multiple fluorescent wavelengths, as well as three-dimensional imaging from different angles.</p>

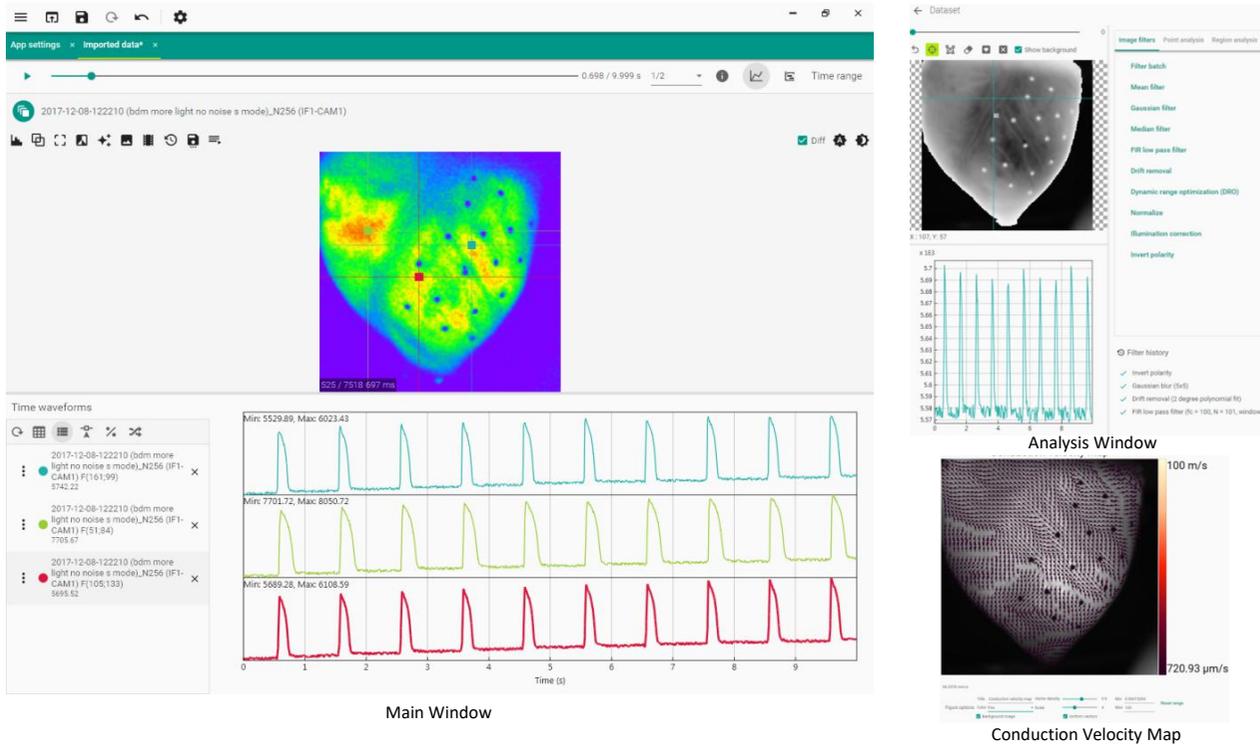
Comparison of Main Specifications

Model	New MiCAM05-N256	New MiCAM03-N256	MiCAM ULTIMA-L	MiCAM02-HR
				
Image Sensor	Original CMOS		Original CMOS	CCD
Active Image Area (HxV)	17.6mmx17.6mm		10mmx10mm	6.4mmx4.8mm
Selectable Number of Pixels	256x256 192x192 128x128 64x64 256x128 256x64 256x32 32x32(1-16 blocks)	256x256 128x128 (*1)	100x100	376x252 184x124 88x60 40x28
Maximum Frame Rate and Pixels (for 1 camera)	1,923fps (256x256px) 3,125fps (192x192px) 5,556fps (128x128px) 20,000fps (32x32px)	1,000fps (256x256px) 1,000fps (128x128px) (*1)	10,000fps (100x100px)	142fps (376x252px) 270fps (184x124px) 454fps (88x60px) 769fps (40x28px)
Approximate number of recordable frames	7,328,244 (*2)	78,168 (Option: 7,328,244) (*2)	20,480 (Option: 40,000)	43,680
Well-Depth	3,000,000e- / 600,000e- (switchable)		1,500,000e-	100,000e-
Number of Connectable Camera	4	2	2	2
Internal Memory	4GB	1GB	1GB	512MB
Pixel Binning Mode	○	△	×	○
Multiple ROI Readout Mode	○	△	×	×
Long Term Acquisition (direct saving to disk)	○	△	×	×
Continuous Output of Light Intensity	○ (8 points, Option: 32)	×	△ (8 points)	×
Analog Inputs for Synchronous Recording	4ch	2ch	2ch (Option:8ch)	2ch
Interface	USB3.0	USB3.0	PCI/USB2.0	PCI/USB2.0
Supported OS	Windows 7/10 64bit	Windows 7/10 64bit	Windows XP/7 32/64bit	Windows XP/7 32/64bit

(*1) MiCAM03 options that can duplicate MiCAM05 functionality.

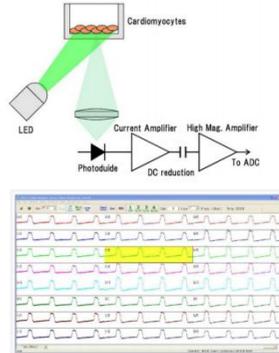
(*2) Number of recordable frames are averaged values calculated during tests, but there is no guarantee that the same results can be obtained with all computers.

New Software for Data Acquisition / Data Analysis



New Products

Easy measurement of cardiomyocyte activity
No need for fluorescent dye
Heart rate / contraction time in real time

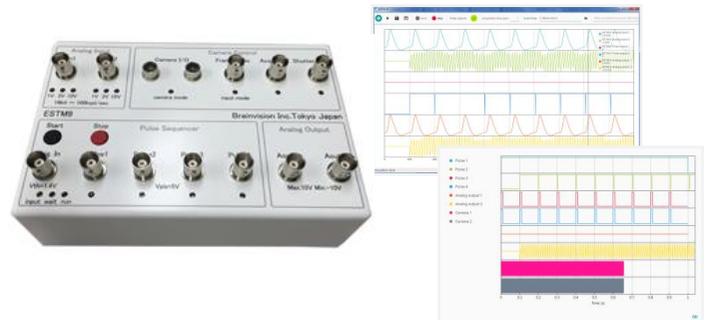


CIO8

Activity of cardiomyocytes can be measured during culture simply by placing the 96-well plate on CIO8. No specific training or knowledge is necessary.

Electrical Stimulator

+ Analog Recording
+ Camera Frame Sync Control
+ Light Source Control ...



ESTM-9

Multifunction electrical stimulator, ESTM-9, is equipped with pulse outputs, external camera control, external lighting control, analog outputs, and analog recording functionality.

* Specifications and appearance are subjected to change without prior notice due to continuous improvements.
 * All products are for research use only. * All products are made in Japan.

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