

FlowMaster Micro-PIV

The **FlowMaster Micro-PIV** systems are designed to measure velocity fields of particle seeded flows with micron scale spatial resolution using PIV techniques.



stereoscopic Micro-PIV setup

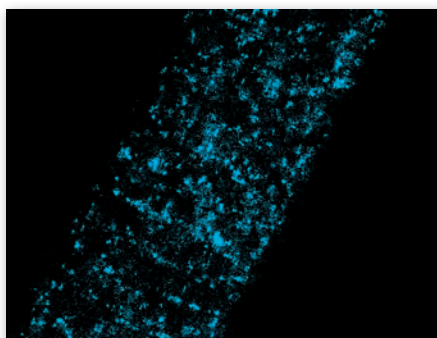
The light source is a double pulsed Nd:YAG laser that is focused by an epifluorescent microscope with a high numerical aperture on a microfluidic device. The microflow is seeded with fluorescent particles. A microscope lens collects the particle signal that has a longer wavelength than the illuminating light. This signal is separated from the laser light by a filter cube and is recorded by a **FlowMaster** series camera. The double frame images are evaluated with conventional PIV algorithms.

Conventional PIV applied to Microscopic Systems

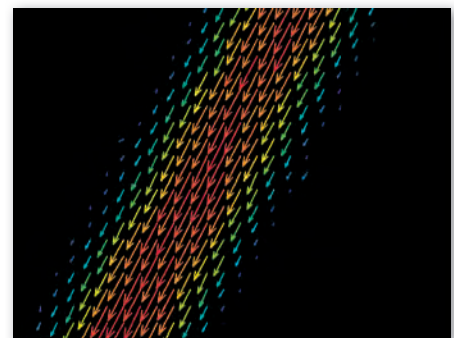
FlowMaster MITAS



The **FlowMaster MITAS** laser imaging system comprises a fully motorized 3-axis microscope stage with a high performance controller and a high precision microscope objective. For standard applications a small DPSS laser for pulsed illumination and a highly sensitive, dual-frame multiple-exposure camera is used. A system PC with built-in synchronization unit controls the complete laser imaging system. The xyz (focus)-traverse system of the **FlowMaster MITAS** can be operated manually using a joystick or the device control manager in **DaVis**, which contains a position list with a number of positions. Every position can be added, edited and deleted and an **easy repeatability of each position** is guaranteed after e.g. lens exchange. The light is delivered through an optical fiber to the microscope. A built-in pilot LED is used for target focusing. The filter cube exchange box allows a fast adaptation for different excitation and emission wavelengths.



particle image of a 200 µm channel



corresponding vector field