

MicroVec Edu PIV Systems

Flow visualization from laboratory to classroom

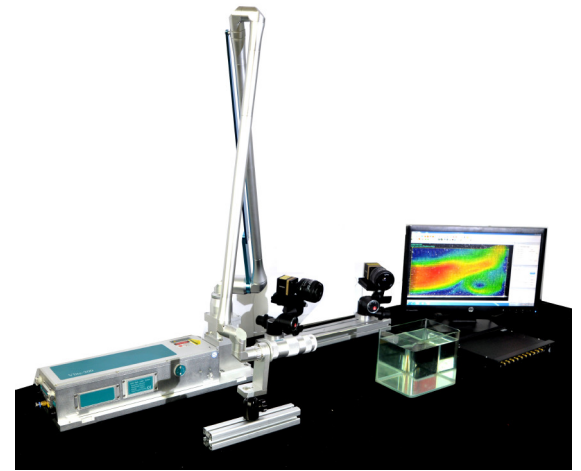
Microvec has newly developed PIV systems for educational and basic research purposes. Our systems have made flow visualization so much easier and portable that they can be readily taken out from traditional laboratory settings into a classroom. Also, hardware and software tools provided in our systems facilitate to deploy them in understanding complex engineering and science concepts, which also makes them versatile systems. Interestingly, all of these come at very affordable prices.

Edu PIV systems

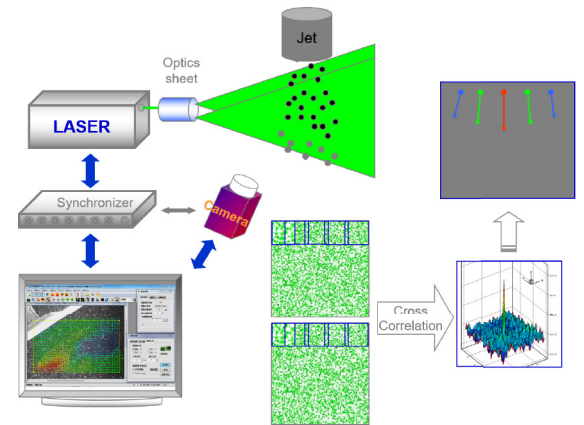
Even if our educational PIV systems are specifically designed to cater customers with limited budget, Microvec's software provides a powerful tool characterized by its industry standard algorithms and intuitive interface. All of our systems come with MicroCap Capture software, MicroVec PIV software, which are designed to be user friendly and interactive at data acquisition and analysis stages respectively. Systems also include Tecplot Focus software to instantaneously visualize flow fields and velocity distributions.

Our systems are suitable for both in air and water measurements, whose flow speeds notching up to 20 m/s. The MV EDU 1 system features a 0.3 MP camera capable of capturing XX pairs of images per second, whilst the MV EDU 3 system offers a resolution of 5 MP at 16 fps. Since our systems feature fully sealed diode lasers (532nm Diode Pumped Solid State (DPSS) green laser, 1W) they are suitable in places where more sensitive Nd:YAG lasers are not suitable (e.g. underwater). In this case, a laser waterproofing upgrade is required. In all configurations, cameras can be upgraded to better resolution and frame rates (a summary of available system configurations are provided at the bottom of the next page).

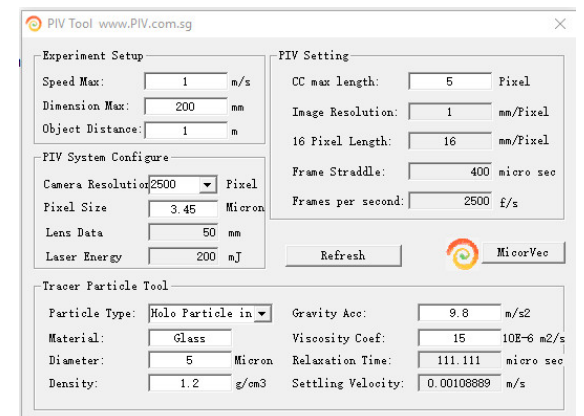
Experiment preparation is important but often ends up in a painful time-consuming exercise. PIV tool available in Microvec software has adequately addressed this and come up with a helpful wizard to guide you through this tedious process. The tool basically assists to determine and adjust PIV system parameters corresponding to a specific experimental condition. The adjustable parameters include the field of view, camera-object distance, and flow speed of an experimental setup; camera resolution and expected pixel resolution in results of the PIV system configuration; and particle type and properties of tracer particles.



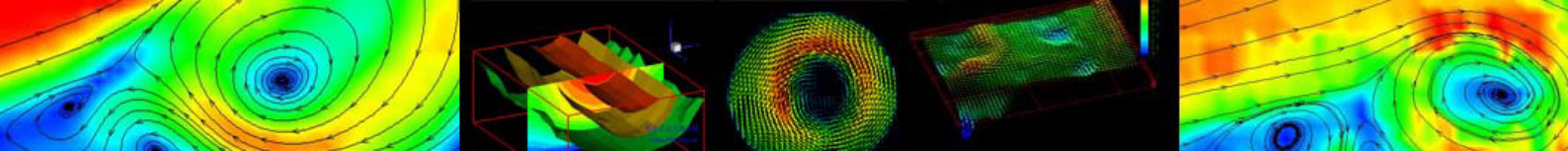
Microvec's Educational PIV system



An illustration of PIV principle

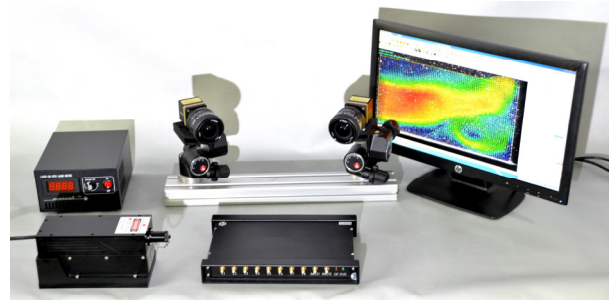


PIV tool for designing experiments



Key features & benefits

- Turnkey Edu PIV systems are affordable and safe to use.
- Our systems are not only limited to simplicity and lower prices, but also their versatility allows to deploy them in a broad range of research applications.
- Learning fluid mechanical problems through the use of state of the art technology help to develop higher order thinking, creativity and research skills
- Intuitive and easy to use software



A complete PIV system

System components

- Laser: DPSS Laser, 1W
- Camera: VGA CCD Camera, 260 fps to CCD Camera of 5 MP @ 16 fps, dual exposure mode
- Light guide arm for the laser beam (optional?)
- Nikon lens
- Frame grabber
- MicroCap Capture Software
- MicroVec PIV Software
- Tecplot Focus Software
- Tracer particle kit



Laser

Applications

There are a variety of water or air measurements that can be studied with our systems in research lab or academic classroom settings, which may involve with fluid-solid interactions. Some of these fundamental topics include shear, vorticity, flow past a body, potential flows, boundary layers, fully developed flows, streamlines.



Camera

Available options

Our Edu PIV systems are available in three different configurations shown in the Table.

System	MV EDU1	MV EDU2	MV EDU3
Camera Resolution	0.3 MP	0.3 MP	5 MP
Maximum flow speed	0-20 m/s	0-20 m/s	0-20 m/s
Frame Rate	30 fps	30 fps	16 fps
3D PIV	No	No	Yes



Synchronizer