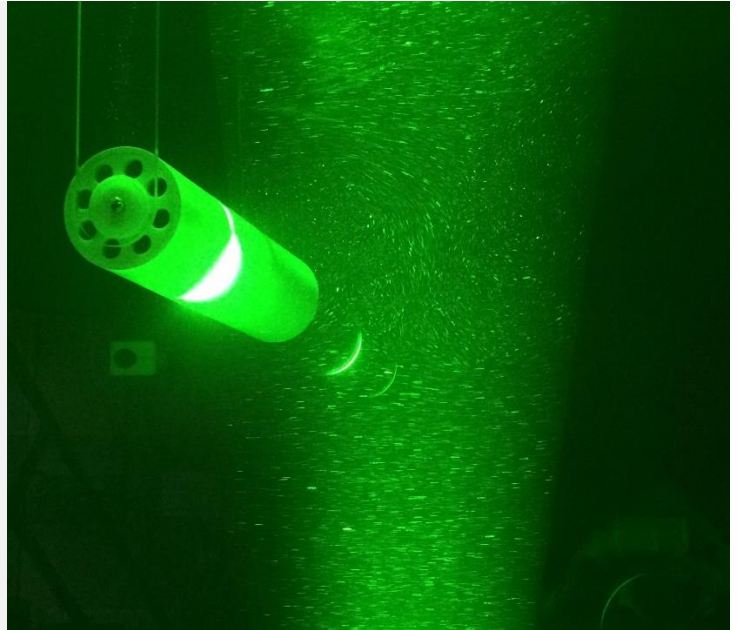


Microvec Fast PIV System

PIV system with full-featured software for fast flows

Our newly introduced Fast PIV system is a fully functional and operational 2D PIV system for flow measurements in air and water with velocities of up to 1000 m/s. It includes a double-pulse 60 mJ PIV laser with a 2 x 25 Hz pulse frequency and a 2.8-megapixel CCD camera, capable of capturing 50 images per second or 25 image pairs that match the frequency of the laser. There is almost no limitation in flow velocities and the system is easily scalable to Stereo or Tomographic PIV. A MicroPulse 825 Synchronizer is included for synchronization, and our MicroCap software is used for image acquisition and control of the components. Lastly, our full featured Microvec software for processing and analysis is added.

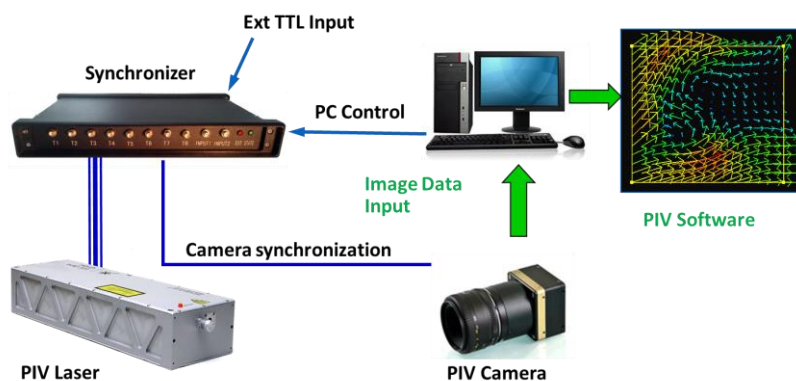


Key Benefits

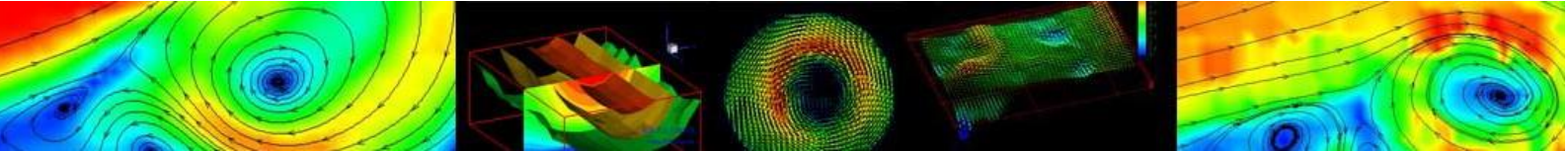
- Fully functional 2D PIV system with a double-pulse PIV laser and CCD camera
- Capable of capturing and calculating up to 25 velocity fields per second
- Can work with flows of up to 1000 m/s
- USB based MicroPulse 825 synchronizer for timing and control of all components
- 2.8 MPix CCD camera with double exposure (PIV) mode, $\Delta t = 150 \text{ ns}$
- Perpetual software license

Particle Image Velocimetry (PIV) is an optical flow visualization method. It provides instantaneous velocity measurements and related properties in flows. The flow is seeded with tracer particles and illuminated by a light sheet to scatter light off the particles. A CCD camera, set to PIV mode, captures an image pair and the displacement between these two images is used to calculate the velocity of the flow which is being observed.

Microvec's Fast PIV is designed to work with applications using both gases or liquids. Because it uses a double-pulse PIV laser, it can work with low or high speeds. Using the light sheet optics, it can cover an area of interest from 40 x 30 mm to 400 x 300 mm, depending on the size and characteristics of the seeding particles.



Overview of the Fast PIV system components, with the data flow.



PIV lasers are designed to operate at peak performance at their rated pulse energy. The Fast PIV System is a complete package that can be used to start conducting experiments right away. All you need to add is a PC and a seeding system for your flow, as well as laser safety equipment, depending on your local rules and regulations.

Laser

Microvec's own PIVotal 60 model is a dual-cavity pulsed laser providing 60 mJ pulses per cavity with 25 Hz. The pulse duration ranges from 7 to 12 ns, short enough to freeze capture a still image of the particle in motion even in the highest velocity flows. It includes a touch screen remote control to operate the laser.



Light Sheet Optics

The divergence angle of 22° can cover a wide area of interest with an adjustable focus distance from 300 to 3500 mm.



Camera and Lens

The Fast PIV System is equipped with a 2.8 MPix (1940 x 1460) CCD camera with double exposure (PIV) mode and a framerate of 54 fps at full resolution. This matches the repetition rate of the laser perfectly. At 2 x 25 Hz frequency of the laser, the camera's frame rate is 50 Hz and can capture images from all laser pulses, resulting in 25 velocity fields per second. The minimum interframe time of 200 ns allows you to work with flows of up to 1000 m/s. The CCD camera includes a Nikon lens with f/1.8.



Synchronizer

The MicroPulse 825 ensures that all hardware components are perfectly synchronized. It uses a USB interface to connect to the PC and is fully integrated into the MicroCap software for easy setup and configuration.



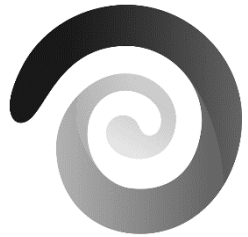
Software

MicroCap, and a full version of the Microvec PIV software, are the heart of the system, combining synchronization, image acquisition, data processing and result analysis. Microvec software is a powerful tool to calculate velocity vector fields and offers data compatibility with Tecplot and MatLab for ultimate visualization of the measurements.

System Includes:

- 2 x 60 mJ 25 Hz Nd:YAG Double Pulse PIV laser
- Laser Sheet Optics
- 2.8 MPix CCD Camera, 54 fps, Double Exposure (PIV) Mode
- Nikon 50mm f/1.8 lens
- High Performance Camera Link Frame Grabber with Cables
- MicroCap Capture Software
- MicroVec 2D PIV Software
- MicroPulse 825 Synchronizer
- Laser Safety Goggles

MicroCap



MicroVec 3.5



MicroVec



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