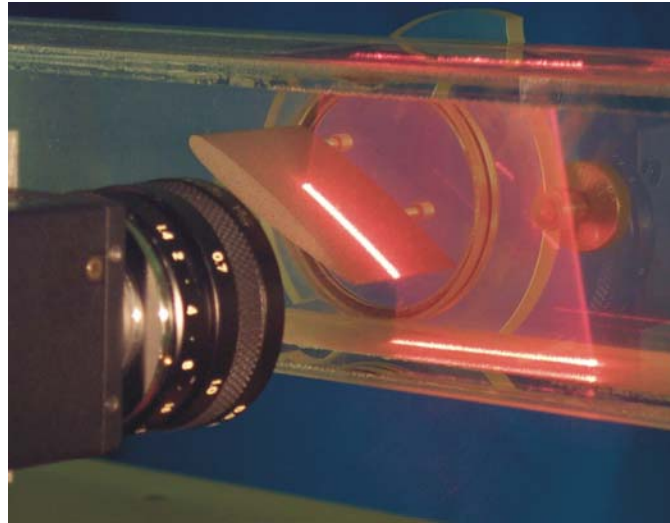


Product description

PixelFlow-Educational™
VioSense Corporation



Summary

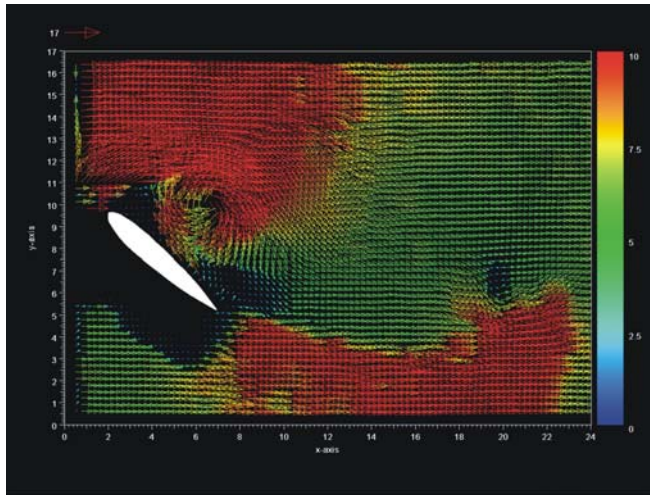
PixelFlow-Educational™ the PIV option for Flow-Lab™, is a particle image velocimetry system for the VioSense Flow-Lab™ Educational Fluid Mechanics Laboratory that provides full-field, instantaneous 2D fluid velocity measurements and is compatible with the interchangeable test sections and experiments included with Flow-Lab™.

The system is comprised of a state-of-the-art laser or flash-lamp optics, camera, framegrabber and timing hardware for synchronizing data acquisition and data collection to a PC. The output from the system is the 2D instantaneous velocity field in a plane and calculated results, such as streamlines and vorticity plots.



Features

PixelFlow-Educational™ utilizes fast and robust techniques and algorithms, such as cross-correlation FFT's, MMX technology and direct disk data acquisition, to provide accurate and precise data sets of velocity, vorticity, strain rate and streamline fields. Time separation of frames can be realized down to 200 ns with 50 ns resolution for measuring a wide range of velocities.



The included graphic routines provide color vector and contour plots for effective technical presentations. Plots can be saved in either tiff, jpg, or bitmap format. The graphic routines allow for extraction of line profiles anywhere within the plot area for detailed examination of the data.

Compared to the full-featured product, PixelFlow™, PixelFlow-Educational™ is limited to 50 consecutive image frames and does not include the Statistical package for calculating averages.

PixelFlow-Educational™ System specifications

Product ID: PixelFlow-Educational™

Description: particle image velocimetry system for Flow-Lab™

Measurement: Instantaneous 2D velocity measurements in a plane

Principle of operation: particle image velocimetry

using cross correlation FFT processing

Laser (optional): dual pulsed Nd:YAG with light sheet optics

power: 200 mj per pulse

repetition rate: 2 x 15 Hz = 30 Hz

Flash-lamp optics (optional): (2) Zenon strobe lamps with fiber bundles

power: 2.2 j per pulse

repetition rate: 20 Hz

sheet thickness: .13" x 3"

Timing control board: pulse separation resolution: 200 ns

min. DPIV pulse separation: 1 μs

Camera: 640 x 480, 8 bits, 30 Hz

Software: outputs: $U, V(x_0, y_0, t_i)_{i=1,50}$

vorticity, streamlines

PC: 1 GHz Intel Pentium4®, 512Mb RAM

17" SVGA monitor, mouse and keyboard

Specifications subject to change without notice.



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