

4-CAMERA VOLUMETRIC PIV SYSTEMS



Volumetric PIV allows for the analysis of 3D flow phenomena in gas or liquid flows. There is a wide range of camera hardware and laser hardware available for selection, to configure the 4-camera volumetric PIV system. This selection allows for the most appropriate configuration to be made in order to meet the requirements for challenging research. At the same time, a number of the system components remain unchanged, allowing the system to be changed and upgraded from one configuration to another. TSI's 4-Camera Volumetric PIV System is the most flexible and powerful system for volumetric flow research.

Features and Benefits

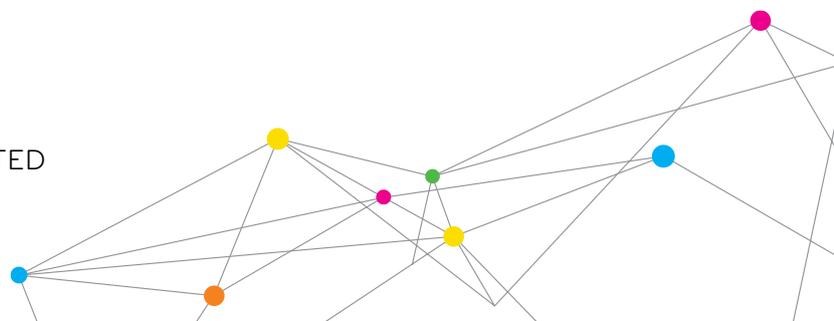
- + Flexible camera arrangement for optimized measurement volume and spatial resolution
- + Variety of hardware makes it possible to choose between high temporal or spatial resolution, or both

Applications

- + Turbulent boundary layers
- + Flow/body interactions
- + Internal flows
- + Biological



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SPECIFICATIONS

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System Attribute	Time-Resolved	High-Resolution
Image capture rate	Phantom high-speed cameras + 1 megapixel to 4 megapixel cameras with frame rate up to 20 kHz	PowerView cameras + 4MP-LS with 16 fps + 8MP with 8.5 fps + 16MP with 3.1 fps + 29MP-LS with 2 fps
Laser energy and pulse rate	High-speed pulsed lasers + Dual-cavity Nd:YAG laser with up to 400 W power and 50 kHz pulse rate + Dual-cavity Nd:YLF laser with up to 100 W power and pulse rate of 5 kHz + Dual-cavity Nd:YAG laser with 100 mJ energy and pulse frequency up to 100 Hz	Low-speed Nd:YAG laser + Dual-cavity laser of up to 400 mJ energy per pulse and pulse frequency of up to 15 Hz
Measurement volume size	Using high-speed Phantom cameras + Up to 150 mm by 150 mm by 50 mm	Using the PowerView cameras + Up to 300 mm by 300 mm by 120 mm
Image capture aperture with Schiempflug lens mount for all individual cameras	F-mount based camera lenses with F/8 to F/22 + 50 mm, 85 mm, 100 mm and 135 mm	F-mount based camera lenses with F/8 to F/22 + 50 mm, 85 mm, 100 mm and 135 mm
Measurement volume standoff	From 200 mm to 2000 mm	From 200 mm to 2000 mm
Particle reconstruction	Mapping function based on volumetric calibration	Mapping function based on volumetric calibration
Velocity field analysis	Particle tracking with time-resolved tracking	Particle tracking using the relaxation method or robust point matching
Grid vector field	User-selected voxel size and overlap	User-selected voxel size and overlap

Specifications are subject to change without notice.

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