Artemis PDI Probe

Phase Doppler Interferometry

Droplet Size and Velocity Measurement

Industrial and R&D Applications

Spray process monitoring and control

Turnkey operation

NEMA environmental enclosure

Artemis PDI Probe

Artium Technologies Inc. continues to advance the state-of-the-art in phase Doppler interferometer (PDI) instrumentation. **The Artemis PDI Probe** has been specifically designed for rugged, industrial and R&D applications that require turnkey operation. It measures size and one component of velocity of individual droplets as they enter the measurement probe volume. Various spray statistics such as mean diameter, median diameter, and size-velocity correlation are computed and can be used to monitor and control the spray process in real-time.

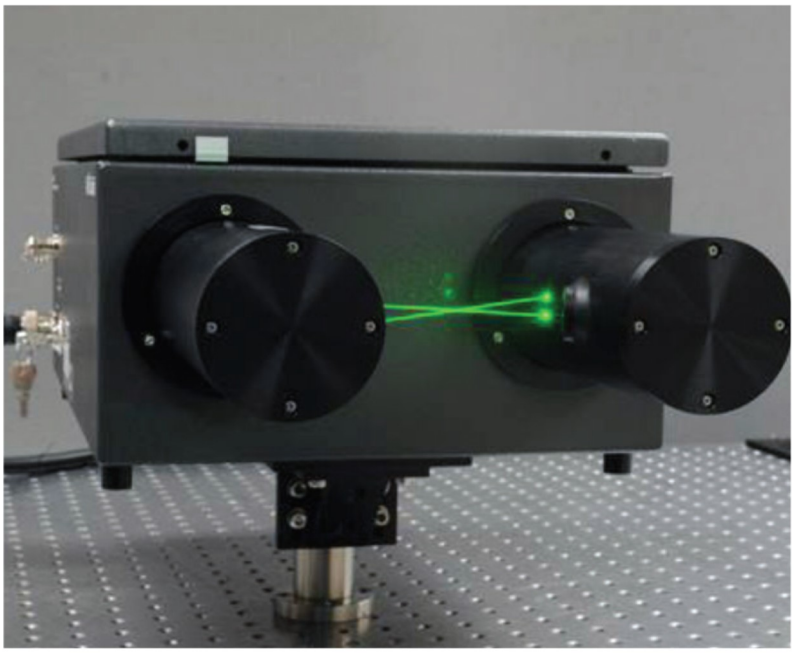
The instrument incorporates an optical transmitter and optical receiver which are packaged in an environmental enclosure. The system is aligned and calibrated in the factory. Routine alignment and calibration is not required. The high powered DPSS lasers built into the transmitter provides stability, compactness, ruggedness, and high reliability; it eliminates the need for inefficient and unreliable fiber optics and bulky Arion lasers.

The instrument also includes the ASA signal processor, data management computer, and the AIMS system software. The Fourier transform based **Advanced Signal Analyzer (ASA)** incorporates a proprietary digital signal burst detection technique and adaptive Doppler burst sampling approach to provide high accuracy in signal detection and measurement.

The Automated Instrument Management System (AIMS) provides fully automatic setup and operation of the instrument. A variety of standard and user-configurable views are available to analyze the data. It also offers remote operation and monitoring via the Internet. A new version of the ASA is now available for improved data accuracy at high speeds in dense environment. The AIMS software includes an auto-setup feature that automatically selects the processor and optics settings for optimal performance in complex sprays.

Technical Specifications:

Drop size measurement range	0.8 to 166 µm (spherical particles)
Size dynamic range	50:1
Estimated size accuracy	+/- 0.5 µm or 0.5% of full size range
Estimated size resolution	+/- 0.5 µm or 0.5% of full size range
Velocity measurement range	-95 m/s to > 350 m/s
Velocity accuracy	+/- 0.1%
Volume flux accuracy	+/- 10%
Receiver focal length	200 mm (fixed)
Transmitter focal Length	300 mm (fixed)
Laser type	Diode pumped solid state (DPSS)
Wavelength	532 nm



US Patents: 7, 126, 694 B1, 7, 564, 564 B2, 7, 788, 067 B2, 8, 525, 093 B2 EPO Patent: EP 1 855 081 B1

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