

## *API Aerosizer Particle Size Analyzer*

The API Aerosizer particle size analyzer is a high speed, high resolution, aerodynamic particle size analyzer for dry powders in the size range of 0.2 to 700  $\mu\text{m}$  (Figure 1). The API Aerosizer consists of an API Aerosizer LD sensor unit, an API Aero-Disperser dry powder dispersing system fitted to the API Aerosizer LD, a controller, and a vacuum pump. The API Aerosizer LD is a dual laser beam optical sensor system for time-of-flight measurements.



*Figure 1: The API Aerosizer particle size analyzer consists of an API Aerosizer LD sensor unit, an API Aero-Disperser dry powder dispersing system fitted to the API Aerosizer LD, a controller, and a vacuum pump.*

The API Aero-Disperser is a microprocessor-controlled dry powder dispersing and sample feed system. It provides advanced fluidization, controlled de-agglomeration, and proprietary transonic flow dispersion technology to handle difficult powder dispersion applications. The system offers a simple, rapid, and reliable method of determining the particle size distributions of highly cohesive as well as free flowing powders, without the need for costly and inconvenient solvents.

A PC with integral math coprocessor and proprietary data acquisition boards performs the task of analyzing particle time-of-flight data using cross correlation techniques. In addition, the PC calculates and displays the measured particle size distribution.

The vacuum pump is used to reduce the pressure in the sensor chamber to the appropriate low vacuum operating conditions. The vacuum pump is equipped with a HEPA filter to collect the sample after analysis in order to prevent particles from entering the pump, as well as an oil de-mister at the pump exhaust.