

Cobra Probe



Year of Purchase: 2018

Cost: USD 13,670.00

The Cobra Probe is a 4-hole pressure probe that provides dynamic, 3-component velocity and local pressure measurements in real-time.

The Cobra Probe features a linear frequency-response from 0 Hz (mean flow) to more than 2000 Hz and is available in various ranges for use between 2 m/s and 100 m/s. The Probe can be used in a wide variety of applications due to its compact size and robust construction. The Cobra Probe is supplied fully calibrated and ready to use.

How it works

The Cobra Probe incorporates four 0.5 mm pressure taps in a multi-faceted head, with the pressure taps connected via tubing to pressure transducers in the body of the Probe. The frequency response of the Probe is linearized to provide dynamic capabilities from the mean velocity component (0 Hz) to more than 2000 Hz. The ratios of the tap pressures are then related to the instantaneous velocity vector and static pressure at the Probe head via calibration tables. Data processing is performed by the included Device Control software.

Uses and Applications

The Cobra Probe can be used to take time-averaged (mean) flow measurements as well as time-varying (turbulent) flow measurements in real time. It can be used in relatively 'dirty', contaminated flows, to replace hot-wire and other anemometers, and can be hand-held or traverse mounted. With its robustness, high-frequency response and ease-of-use, there are a large number of applications for the Cobra Probe as indicated below.

General uses in all applications

- Flow mapping
- Rapid point (hand-held) measurements
- Simultaneous multi-probe measurements
- Turbulent wake measurement and mapping

CFD boundary & initial conditions determination

- Vehicle HVAC (air-conditioning) systems

Industrial/environmental aerodynamics

- Boundary-layer profiles for industrial and building aerodynamics
- Pedestrian level flow-field studies
- On-site measurements in commercial or industrial facilities

Vehicle aerodynamics

- Measurement of atmospheric winds during on-road, on-vehicle testing
- Measurement of vehicle under-body flow
- Measurements on-road, at test tracks or in wind tunnel facilities

Aircraft aerodynamics

- Flow mapping around scale models
- Atmospheric turbulence characterization on light aircraft

Wind-tunnel measurements

- Wind tunnel flow characterization
- Flow mapping around model-scale vehicles, ships and aircraft.