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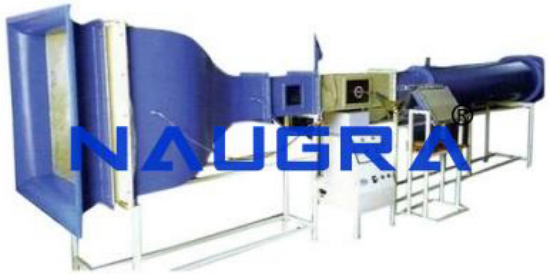
Product Name :	**Product Code :**
Wind Tunnel For Boundary Layer Experiments	NLAB-TECHNICALAB30033



Description :

Wind Tunnel For Boundary Layer Experiments

Technical Specification :

The following experiments may be carried out with or without a constant temperature anemometer.

Boundary layer growth in the case of a two-dimensional wall jet.

Measurement of velocity profiles.

Measurements in laminar and turbulent boundary layers .

Establishment of a dimensionless profile and invariants.

Determination of the local skin-friction coefficient.

Studies of mass and momentum flows, determination of dimensionless coefficients.

Additional experiments which can be carried out with a constant temperature anemometer .

Hot wire anemometer calibration.

Verification of King’s law.

Effects of probe angle relative to the main stream velocity direction.

Introduction to measurements in turbulent flows.

Measurements of turbulent intensity in a free jet and in a boundary layer.

Measurements of turbulence spectra for different Reynolds numbers.

Technical specifications

A centrifugal fan is mounted inside a settling chamber, of 0.25 sq.m cross-section, which is fitted with an interchangeable filter, an anodised aluminium honeycomb flow straightener, and a bronze screen to lower the turbulence level.

A plexiglas two-dimensional contraction, with a contraction ratio of 30, ensures good flow distribution at the jet exit.

A simple mechanical by-pass system on the chamber wall is used for progressive and accurate control of the jet exit velocity up to 25 m/s.

The jet is confined by two vertical side-walls constructed in plexiglas. One of the panels is hinged and can be lowered to allow access to the test section.

The traversing gear can be displaced along the entire length of the test section by means of a carriage mounted on linear ball races, which can be locked in position. Probe position is given by a pointer on the carriage and a scale on the test section.

The traversing gear is designed to allow vertical displacement of the probe along the centre-line of the test section. Vertical position is determined by means of a vernier to within 0.01 mm. Fixtures permit the use of interchangeable probes of different diameters.

A boundary layer probe available as standard.

Motor rating: 230 W.

Jet velocity: up to 25 m/s.

Nozzle width: 300 mm.

Nozzle height: 10 mm

Complementary equipment:

Total head probe.

Pitot tube.

Projection micro-manometer, resolution 0.2 mm water column.

Hot wire anemometer and probes.

Naugralabequipments

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