



AF13

ROUND TURBULENT JET

Allows students to investigate a jet of air as it emerges from the end of a tube



- One of a series of eight experiment modules that fits to the Modular Air Flow Bench (AF10)
- Allows a number of tests on the velocity of a submerged jet emerging from the end of a tube
- The tube has a carefully designed inlet for best results
- Toggle clamp connections to the Modular Air Flow Bench plenum chamber for quick and easy fitment
- Quick-release coupling fitted to the Pitot tube to allow rapid and reliable connection to the AF10a Manometer

ROUND TURBULENT JET

DESCRIPTION

This module consists of a tube with a specially designed rounded entry. The tube is mounted in a stiff plate with the rounded entry on one side and the exit on the other. To set the experiment up the contraction is unclipped from t

he Air Flow Bench (AF10) and set aside. The whole plate is then mounted onto the plenum chamber directly so that air enters the rounded entry of the tube and leaves the end in a jet. The total pressure in the jet is measured by a Pitot tube held by a traversing mechanism. The mechanism allows the Pitot tube to move radially across the jet and axially along it. The Pitot tube is connected to the AF10a manometer (ancillary) via a flexible tube fitted with a quick-release coupling.

STANDARD FEATURES

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives

ESSENTIAL BASE UNIT

- Modular Air Flow Bench (AF10)

ESSENTIAL ANCILLARIES

- Multitube Manometer (AF10a)

LEARNING OUTCOMES

- Decay of the centre-line velocity.
- Velocity profile at various distances along the jet and the development of the spread of the jet.
- Analysis of the velocity profiles to show how the mass flux in the jet increases, the kinetic energy flux decreases and the momentum flux remains constant along the jet length.

SPECIFICATIONS

PACKED DIMENSIONS AND WEIGHT:

0.08 m³; 15 kg

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory

STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +40°C

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C