

Product Name :
Compressible Flow Unit

Product Code :
NLAB-MECHANICALAB230007



Description :

Compressible Flow Unit

Technical Specification :

A advanced versatile apparatus, based around a variable-speed air compressor, designed to teach the concepts of compressible flow. The basic unit contains everything required to demonstrate the fundamental principles,

A radial fan with infinitely variable speed control draws in air from the environment. At the intake the airflow is accelerated in a measuring nozzle. Further down the measuring section the air flows through interchangeable measuring objects. Drawing in the air and the arrangement of the measuring objects on the intake side of the fan minimizes turbulence when flowing into the measuring objects. All measuring objects are made of transparent material and provide excellent insight into the inner structure.

Compressible Flow Unit

FEATURES

Investigate flow of compressible fluids

Subsonic and transonic air flow

Variable speed on the radial fan for adjusting the mass flow rate

Minimized turbulence by drawing in air and optimum arrangement of the measuring objects

Transparent measuring objects with connectors for pressure measurement provide insight into the internal structure

Measuring nozzle for determining the mass flow rate

Pressure losses in subsonic flow in pipe elbows and various pipe sections

Pressure curve at subsonic and transonic nozzle flow

Orifice for determining volumetric flow rate by differential pressure measurement

Record fan characteristic curve using a throttle valve

Digital displays for pressures, velocity and speed

SPECIFICATION

Radial fan

Max. Speed: 31000min⁻¹

Max. Volumetric flow rate: 226m³/h

Max. Head: 318mbar

Max. Power consumption: 1,8kW

Measuring objects

Pipe section: 1m

Ø 16, 24, 34mm

90° pipe elbow

2 nozzles, inner diameter: 12...34mm

With sudden enlargement

With gradual enlargement (de Laval nozzle)

Orifice with orifice disks

Ø 12, 19, 25, 32mm

Throttle valve: Ø 34mm

Measuring ranges

Speed: 0...99999min-1

Pressure:

1x 0...25mbar

1x 0...600mbar

1x 0...1000mbar

Velocity: 0...65m/s

230V, 50Hz, 1 phase

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