

MEASUREMENT OF FLOW VELOCITY

MED 19.06



Material:

Item Code	Qty	Description
DS101-1G	1	Support base, large, L=500 mm
DS103-7G	1	Sliding saddle, H=70 mm
DM701-2L	1	Blower 12 V
P3130-2Q	1	Fixed voltage transformer 12V DC/10 A
DT816-2A	1	Anemometer "inno"
P3120-5B	1	S-shaped assembly platform

MEASUREMENT OF FLOW VELOCITY

MED 19.06

Purpose

Measurement of flow speeds (wind speeds)

Preparation

- the sliding saddle is fixed to the support base
- the blower is inserted into the sliding saddle and screwed down tightly
- the Anemometer is attached to the S-shaped assembly platform
- the rotary knob for the flow speed of the blower is turned to the very left
- the blower is powered by a fixed voltage transformer (12 V DC, min. 6 A)
- turn on the Anemometer
- turn on the blower and adjust the flow speed to approximately 10 m/s (it is indicated on the scale at the rotary knob)

Experiment 1

The wind wheel of the anemometer is held into the air stream of the blower at a distance of approximately 20 cm, afterwards we read off the flow speed.

We continue this procedure and shorten the distance to the blower by 5 cm every time before we read off the flow speeds.

Result

The closer we are to the blower, the higher is the flow speed.

Experiment 2

We hold the wind wheel at a distance of 10 cm above the air stream.

Then we lower the wind wheel slowly.

The flow speeds are observed while we pass the air stream with the wind wheel.

Result

The flow speed varies at different spots at the cross-section of the air stream. This is caused by turbulences which are created after the ventilation.

Experiment 3

We hold the wind wheel at a distance of 10 cm into the air stream.

Then we adjust the flow speeds on the rotary knob of the blower from Zero to the maximum.

Result

The blower can reach flow speed from 0 to approximately 15 m/s.

Note

We can also measure other flow speeds with the anemometer, such as:
Puff of breath, flow speed of a hairdryer, flow speed of the wind and others

Measuring range of our Anemometer: 0.8 to 30 m/s