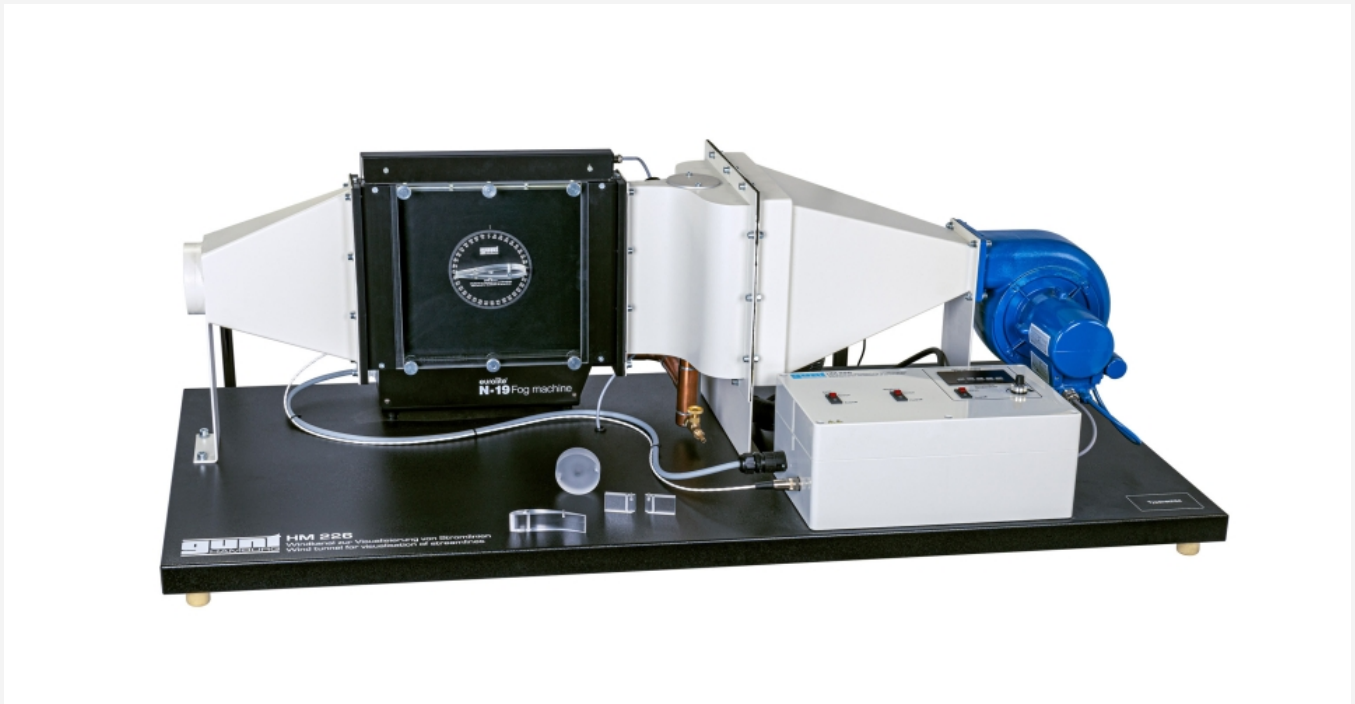


HM 226

Wind tunnel for visualisation of streamlines



Description

- wind tunnel with fog generator
- various models included
- illuminated experimental section with sight window
- low-turbulence flow

Streamlines can be visualised in steady flow in the wind tunnel by using fog, smoke or tufts. In this way, a clear impression of an instantaneous flow field can be presented and problematic flow areas, such as stall, can be shown.

The experimental unit HM 226 is an open wind tunnel, in which streamlines, flow separation and turbulence can be made visible by using fog. Fog is generated by evaporating a glycol mixture in the fog generator. The evaporated fog fluid is non-toxic, water soluble and the precipitate does not affect common materials. Precipitates can be easily wiped off with a cloth.

The air flow is generated by a fan. To achieve a low-turbulence flow, the air flows through a stabilisation chamber with a flow straightener. Fog is intermittently added to the flowing air through several nozzles. Then the air flows around or through a model in a experimental section and the flow field becomes visible. The experimental section has a black background and a sight window; additional lighting makes the streamlines clearly visible.

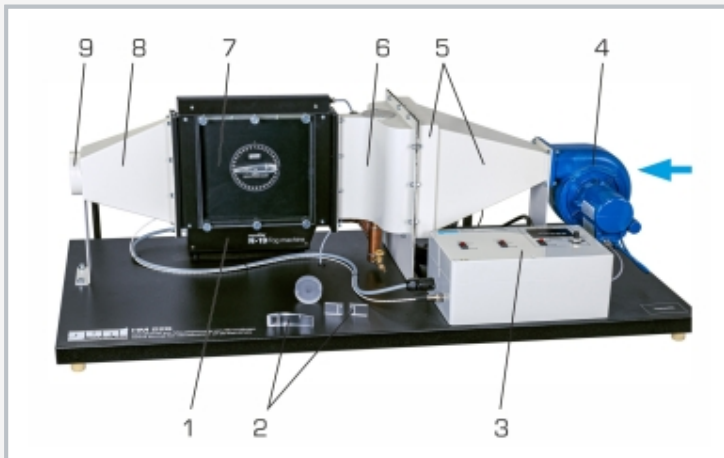
Four interchangeable models (cylinder, orifice plate, aerofoil and guide vane profile) are included. The aerofoil's angle of attack is adjustable.

Learning objectives/experiments

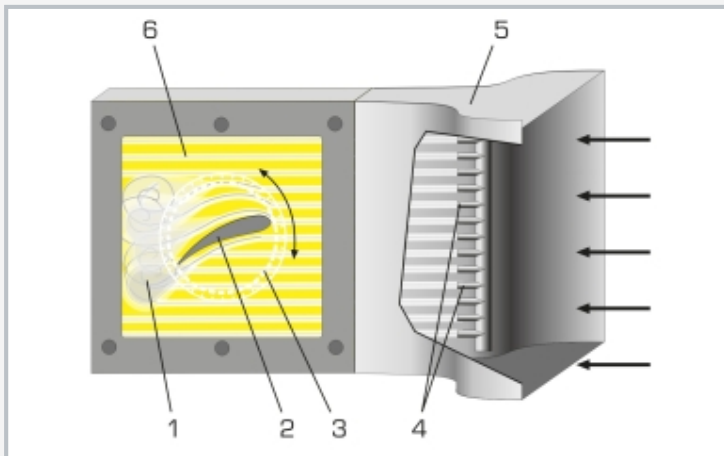
- visualisation of streamlines
- flow around or through differently shaped models
- flow separation and turbulence
- stall as a function of the angle of attack

HM 226

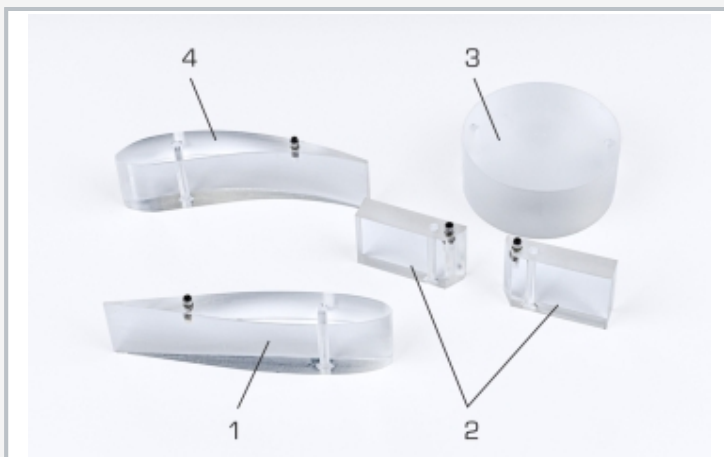
Wind tunnel for visualisation of streamlines



1 fog generator, 2 models, 3 switch cabinet, 4 radial fan, 5 stabilisation chamber with flow straightener, 6 intake contour in nozzle design, 7 experimental section with sight window, 8 diffuser, 9 air outlet; blue arrow shows the direction of flow



Detailed view of the experimental section
1 turbulence, 2 model, 3 scale for adjusting the angle of attack, 4 nozzles for injecting fog, 5 intake contour in nozzle design, 6 illuminated experimental section



1 aerofoil, 2 orifice plate, 3 cylinder, 4 guide vane profile

Specification

- [1] visualisation of streamlines flowing around and through different models
- [2] open wind tunnel with radial fan, air flow can be adjusted
- [3] fog is generated by evaporating a glycol mixture in the fog generator
- [4] operation with non-toxic and water-soluble fog fluid
- [5] illuminated experimental section with sight window and black background
- [6] low-turbulence flow through stabilisation chamber with flow straightener
- [7] distributor with nozzles for injecting the fog
- [8] four different models, angle of attack at aerofoil and guide vane profile adjustable
- [9] scale for displaying the angle of attack

Technical data

Experimental section

- transparent area: 252x252mm
- cross-section: 252x42mm
- aerofoil pivotable by 360°

Models

- cylinder: diameter: 60mm, height: 24,5mm
- aerofoil: 15x24,5x100mm
- guide vane profile: 20x24,5x100mm
- orifice plate: 2x 25x24,5x10mm
 - ▶ orifice opening: 10mm

Radial fan

- max. volumetric air flow rate: 480m³/h
- max. pressure difference: 300Pa

Fog generator

- power consumption: 700W

230V, 50Hz, 1 phase
 230V, 60Hz, 1 phase
 120V, 60Hz, 1 phase
 UL/CSA optional
 LxWxH: 1400x620x500mm
 Weight: approx. 57kg

Scope of delivery

- 1 experimental unit
- 1 fog generator
- 1 set of models
- 1 fog fluid (5L)
- 1 hose
- 1 set of tools
- 1 set of instructional material

HM 226

Wind tunnel for visualisation of streamlines

Optional accessories

WP 300.09

Laboratory trolley