

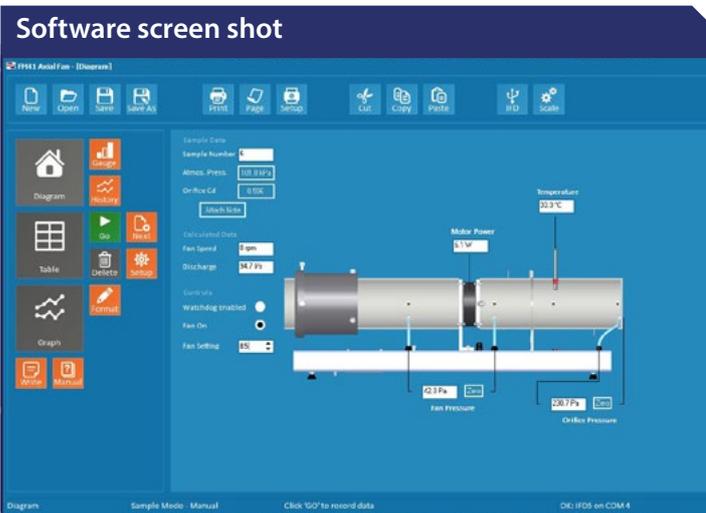
FM
SERIES

Axial Fan Demonstration Unit – FM41

The Armfield Axial Fan Demonstration Unit is fitted with electronic sensors to measure the pressure head developed across the fan, the pressure across the orifice plate (and hence the flow rate), the rotational speed of the fan and the air temperature.

The fan speed is controlled by modulated dc supply complete with current sensing to enable the power drawn by the fan to be measured.

STAINLESS STEEL CONSTRUCTION WITH TRANSPARENT TEST SECTION
CONTROL AND DATA LOGGING VIA PC
SIMPLE USB CONNECTIVITY



Description

The Armfield axial fan demonstration unit is mounted on a stainless steel plinth. Transparent air inlet and air outlet ducts allow the fan construction to be clearly observed. A manually operated adjustable aperture allows the air flow rate to be varied.

A calibrated orifice plate is used on the discharge to measure the air flow rate. Electronic sensors measure the pressure head developed across the fan, the pressure across the orifice plate (and thus the flow rate), the rotational speed of the fan and the air temperature.

The fan speed is controlled by modulated DC supply complete with current sensing to allow the power drawn by the fan to be measured.

Requirements

Scale



- ▶ Armfield IFD7
- ▶ Software requires a computer running Windows XP or above with a USB port (computer not supplied by Armfield)

Armfield IFD7
Interface Unit



Technical details

Max flow rate:	38 l/s typical
Max head:	0.06kPa
Max fan speed:	2,700rpm
Motor power rating:	5W
2 x Pressure Sensors:	0 to 2.5mBar
Inlet Duct Dia:	123mm
Infrared Sensor to measure Fan Speed	

Overall dimensions

Height:	0.95m
Width:	0.85m
Depth:	0.45m

Packed and crated shipping specifications:

Volume:	0.75m ³
Gross weight:	90kg

Demonstration capabilities

- ▶ Measurement of inherent-speed machine performance in terms of static and total pressures, rotor speed and motor input power as a function of inlet flow
- ▶ Measurement of overall efficiency and estimation of impeller power efficiency
- ▶ Measurement of performance at constant speeds
- ▶ Introduction to similarity laws for scale-up
- ▶ Comparison of student calculations with computer results

Software

The ArmSOFT software enables the operator to control the fan speed 0 to 100%. Feedback from the sensors is then displayed in real time for the end user with simultaneous data logging.

The data trend is also displayed graphically in real time and can be exported to another platform such as Excel for further analysis.

Essential accessories / equipment

- ▶ Armfield IFD7

Ordering specification

- ▶ A small-scale axial fan demonstration unit comprising of an inlet duct, the fan, an outlet duct and an adjustable aperture, all mounted on a stainless steel base
- ▶ Equipped with electronic measurement sensors for fan head pressure, flow rate (via orifice plate), fan speed and air temperature
- ▶ Transparent ducts give visibility of the fan in operation
- ▶ Capable of being linked to a PC (not supplied) via a USB interface console (an essential accessory), which does not require internal access to the computer. Also enables interfacing to other software packages
- ▶ Supplied with software providing full instructions for setting up, operating, calibrating and performing the teaching exercises. Facilities for logging, processing and displaying data graphically
- ▶ Offers a complete teaching package of coursework and laboratory investigation

Ordering codes

- ▶ FM41
- ▶ IFD7-A: 220-240V / 1Ph / 50Hz
- ▶ IFD7-G: 220-240V / 1Ph / 60Hz

Warranty

Armfield standard warranty applies with this product

Knowledge base

- > 26 years' expertise in industrial R&D technology
- > 50 years' providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001 Company



Products CE certified

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Aftercare

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