

## NOZZLE PERFORMANCE TEST MODULE F300A



Year 1  
study

### Features

- Five nozzles Supplied as standard
- 1 x Convergent
- 4 x Convergent-Divergent
- Micrometer Adjustment

### Description

A series of convergent and convergent-divergent nozzles may be installed in one of two locations in a high pressure measuring chamber. A pressure regulator, throttle valve and back pressure valve allow the air flow rate, inlet and discharge (or back) pressure to be varied.

Standard unit includes convergent – divergent ducts designed to produce Mach 1.0 at the throat and supersonic velocities downstream.

Inlet and outlet air pressures, temperatures and air flow

rate are recorded by a combination of instrumentation on the Compressible Flow Range F300 base unit and the optional module.

### Related laws

- Compressible Flow
- Nozzles
- Flow Theory
- Bernoulli's Equation
- Shock Waves
- Supersonic Flow
- Kinetic Energy Producers
- Thrust Producers
- Fluid Acceleration
- Turbines
- Jet Propulsion
- Rockets

- Ejectors

following code:  
F300A

### **Learning capabilities**

- Visual demonstration of nozzle choking.
- Determination of the effect of inlet and back pressure on mass flow rate through nozzles.
- Comparison of mass flow rate with theoretical values.
- Measurement of the velocity of a jet issuing from a nozzle operating at a variety of inlet and back pressures.
- Calculation of nozzle efficiencies.
- Determination of jet reaction and specific thrust at a range of inlet and back pressures.

### **Technical Specification**

- 2 x Thermocouples
- Calibrated cantilever beam

### **Essential Ancillaries**

- F300

### **What's in the Box?**

- 1 x F300A
- 5 x Nozzles
- 1 x Weight Carrier
- 1 x 0.5N, 1 x 1N, 1 x 2N
- 1 x micrometer assembly
- 1 x Drain Valve key
- 1 x Exhaust coupling assembly
- 2 year spares comprising 'O' ring set
- 1 x PTFE tape
- Instruction manual
- Packing List
- Test Sheet

### **Essential Services**

- Air requirement: approximately 420 litres free air per minute at a pressure of 700 to 1000 kN m<sup>-2</sup> gauge supplied to the F300 base unit.

### **Ordering information**

To order this product, please call PA Hilton quoting the

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 2 YEARS