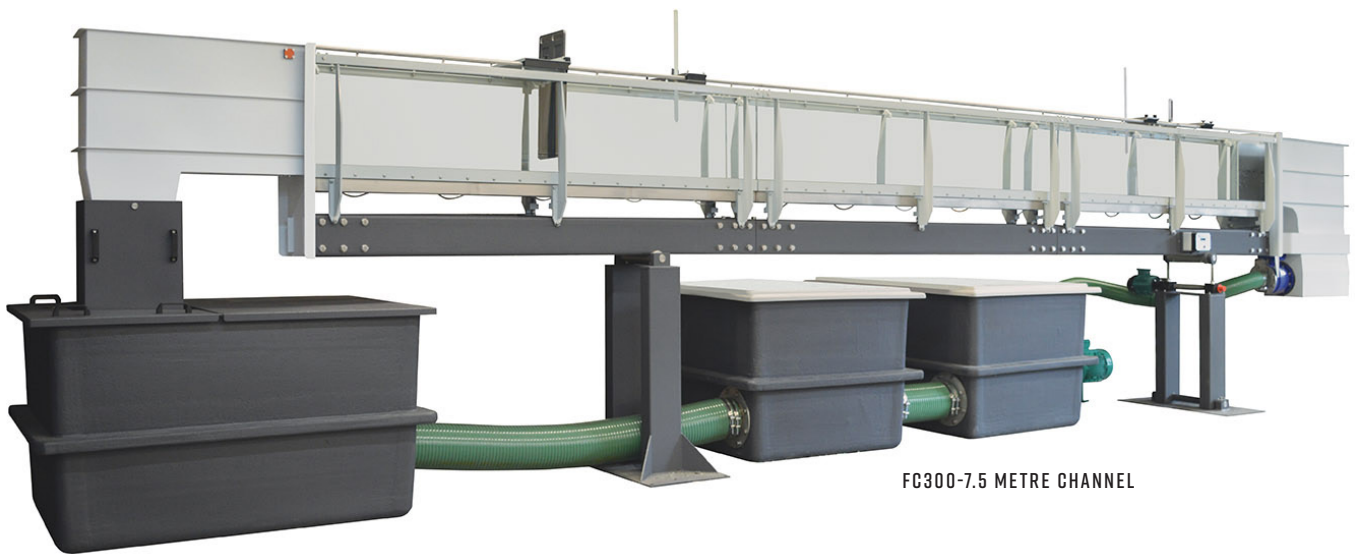




VDAS® FC300-(2.5, 5, 7.5, 10, 12.5 AND 15)

FLOW CHANNELS

Large open channel flumes that provide the opportunity for advanced research and student study on a wide range of fluid flow topics. Select a length to suit your needs and the space available.



FC300-7.5 METRE CHANNEL

KEY FEATURES

- Digital data acquisition for quick and accurate measurements
- Transparent sides for clear visibility, ideal for group demonstrations
- Stainless steel channel base plate and toughened glass channel walls, provides long-lasting use
- Built-in, re-circulating water supply for convenient laboratory use
- Bed plate pressure tapings at 0.25 metre intervals, providing detailed analysis potential

KEY SPECIFICATIONS

- Pump flowrate: 2100 l.min⁻¹ maximum.
- Digital inclinometer: High resolution of 0.05 degrees.

LEARNING OUTCOMES

- Sluice gate for investigations into hydraulic jump, specific energy and the determination of discharge coefficient.
- Submerged sharp-crested weir reveals the relationship between head over a weir and discharge.
- A broad-crested weir and the effects of changing the profile of the weir (optional ancillary).
- Uniform flow in an inclined channel with investigations into the Chezy factor and coefficient.
- A Venturi flume to indicate the discharge and surface profile, thus the derivation of the discharge coefficient.
- Further experimentation with additional optional models.



FLOW CHANNELS

DESCRIPTION

The FC300 Series channels are 300 mm in width, 450 mm in height, and are available in 2.5 metre, 5 metre, 7.5 metre, 10 metre, 12.5 metre and 15 metre lengths.

The flumes have various models available, giving students a wide choice of experimentation in open channel flow.

The flumes have a built-in re-circulating water supply connected to a digital flow metre for accurate measurements during experimentation.

The flumes have pressure measurement tapings at 0.25 metre intervals along the working section. These tapings can connect either to a multi-tube manometer or to a 32-way pressure display. The 32-way pressure display connects to TecQuipment's VDAS® for real-time data acquisition.

Each FC300 is supplied with two level gauges (hook and point) and a Pitot tube, all of which mount onto and run along the instrument rails at the top of the flume. Measurements from these instruments combined with the digital flow meter provide the potential for extensive analysis of open channel flow for research or advanced study.

Bed-load transport can be investigated using the optional Sediment Loop (FC300sl). This ancillary provides a closed sediment circuit consisting of a sediment trap and feed mechanism which allows sand to be pumped from the trap to a feeder located above the working section between experiments.

The flume is made of transparent glass, precision-built to ensure parallel walls and a consistently accurate cross-section along its length. A sturdy steel square-section firmly supports the channel throughout its length. It has a floor-standing frame that supports the working section at a convenient eye-level position for students.

Screw jacks raise and lower the supports inclining the channel as required. The digital inclinometer gives an accurate display of the channel angle.

A pump with a speed controller, forces water up to the flow settling chamber at the upstream end of the channel. This gives smooth, uniform flow, free from entry effects.

STANDARD FEATURES

- Supplied with a comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer
- Versatile Data Acquisition System (VDAS-FC)

ACCESSORIES (INCLUDED)

- Float switch
- Sluice gate
- Level gauges
- Pitot tube
- Sharp crested weir
- Powered end gate

OPTIONAL MODELS

- Radial Gate (FC300b)
- Sluice Gate (Undershot Weir) (FC300c)
- Crump Weir (FC300d)
- Dam Spillway (FC300e)
- Ogee Weir with Tappings (FC300e2)
- Energy Dissipation (FC300e3)
- Venturi Flume (FC300f)
- Parshall Flume (FC300h)
- Bridge Piers: Cylinder, Round Nose, Square, Sharp Nose (FC300j)
- Roughened Bed (FC300k)
- Roughened Bed - Sand (FC300k2)
- Roughened Bed - Turf (FC300k3)
- Siphon Spillway (FC300l)
- Self Regulating Siphon (FC300l2)
- Lift and Drag (FC300ld)
- Vortex Induced Vibrations (FC300m)
- Wave Generator and Beach (FC300n)
- Culvert Model (FC300p)
- Rectangular and V-Notch Weirs (FC300q)
- Broad Crested Weir (FC300r)
- Trapezoidal Flume (FC300z)

RECOMMENDED INSTRUMENTATION

- Instrument Carrier (FC300ic)
- Propeller Flowmeter (FC300x)
- Multi-Tube Manometer (FC300w)
- 32-Way Pressure Display (FCA1)

RECOMMENDED ANCILARY

- Sediment Loop (FC300l)

FLOW CHANNELS

SPECIFICATIONS

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

NETT DIMENSIONS:

- FC300-2.5 metre channel:
Approximately 4.5 metres long, 2.2 metres wide, 2.1 metres high and 1400 kg
- FC300-5 Metre Channel:
Approximately 7 metres long, 2.2 metres wide, 2.1 metres high and 1925 kg
- FC300-7.5 Metre Channel:
Approximately 9.5 metres long, 2.2 metres wide, 2.1 metres high and 2450 kg
- FC300-10 metre Channel:
Approximately 12 metres long, 2.2 metres wide, 2.1 metres high and 2975 kg
- FC300-12.5 Metre Channel:
Approximately 14.5 metres long, 2.2 metres wide, 2.1 metres high and 3500 kg
- FC300-15 Metre Channel:
Approximately 17 metres long, 2.2 metres wide, 2.1 metres high and 4100 kg

DIMENSIONS OF WORKING SECTION:

Nominally (2.5, 5, 7.5, 10, 12.5 or 15) metres long, 300 mm wide and 450 mm deep

FLOW RATE:

2100 l.min⁻¹ maximum.

TILTING:

2.5 to 10 metre flumes inclinable by a minimum of: +2.5% (downwards) to - 0.5% (upwards)

Note: 12.5 and 15 metre flume tilting range (please enquire)

FLOW CHANNEL SECTION:

Model fixing points at 0.5 metre intervals

WATER STORAGE CAPACITY:

- FC300-2.5 metre channel: 1200 Litres
- FC300-5 Metre Channel: 2400 Litres
- FC300-7.5 Metre Channel: 3600 Litres
- FC300-10 metre Channel: 4800 Litres
- FC300-12.5 Metre Channel: 6000 Litres
- FC300-15 Metre Channel: 7200 Litres

OPERATING CONDITIONS

POWER SUPPLY:

AC 3-Phase 6 kW, 50/60 Hz 415 V

AC 3-Phase 6 kW, 50/60 Hz 220 V

