

FLOW CHANNELS

VDAS[®] FC300

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 (5 to 15 m) to suit needs and the space available.



SCREENSHOT OF THE
VDAS[®] SOFTWARE

- 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 provide 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

The FC300 series flume working sections are 300 mm in width and 450 mm deep. They come in 2.5-metre sections and are available in 5-metre, 7.5-metre, 10-metre, 12.5-metre and 15-metre lengths.

Included with the flow channel:

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



HOOK DEPTH GAUGE

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
- With the optional Sediment Loop (FC300sl) sediment transport, scouring, ripple and dune formation and similar studies can be performed



FC300 CONTROL
BOX AND
INSTRUMENT
FRAME (SHOWN
WITH VDAS[®] -
INCLUDED)

ALTERNATIVE PRODUCTS:

- 2.5-Metre Flow Channel (FC50-2.5)
- Sediment Transport Channels (FC80)

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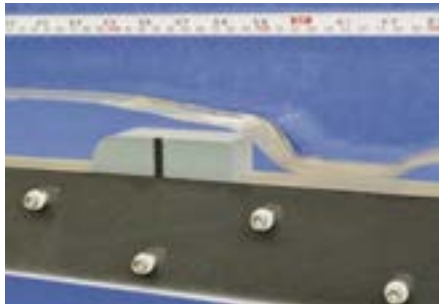
2.5-METRE FLOW CHANNEL

FC50-2.5

Demonstrates flow around weirs and other objects in an open channel. Supplied with all the models and instrumentation required for a complete package in flow channel investigations.



SHOWN WITH THE DIGITAL HYDRAULIC BENCH (H1F) - AVAILABLE SEPARATELY



FLOW OVER BROAD CRESTED WEIR

- Inclinable acrylic channel providing maximum flow visualisation
- Inlet includes baffle section to provide steady flow conditions
- Works with TecQuipment's Digital Hydraulic Bench (H1F) for easy installation
- Includes:
 - Broad-crested weir
 - Sluice gate (undershot weir)
 - Venturi flume
 - Sharp-crested weir
 - Cylindrical gate
 - Crump weir
 - Instrument level gauge
 - Pitot tube

The apparatus consists of a floor-standing 2.5-metre, 53 mm wide flow channel, together with various gates, weirs and blocks, enabling the phenomena of flow channels to be easily demonstrated and studied. The FC50 is TecQuipment's most compact flume, providing simple installation and flexible storage in the laboratory.

LEARNING OUTCOMES:

- Study of sluice and drum gates including investigation into hydraulic jump, specific energy and the determination of discharge coefficient
- Study of submerged narrow-crested and crump weirs revealing the relationship between head over a weir and discharge
- Study of a broad-crested weir (by combining the square and radius jump blocks) and the effects of changing the profile of the weir
- Study of uniform flow in an inclined channel with investigations into the Chézy factor and coefficient
- Study of a Venturi flume to indicate the discharge and surface profile, thus the derivation of the discharge coefficient

ESSENTIAL BASE UNIT:

- Digital Hydraulic Bench (H1F)

ALTERNATIVE PRODUCTS:

- Sediment Transport Channels (FC80)
- Flow Channels (FC300)

FLOW AND SEDIMENT TRANSPORT CHANNELS

FC80 (2.5 AND 5)

Open channel flumes that provide students with the ability to study the varying effects of sediment transport, bedform dynamics and fluid flow in an open channel.



2.5-METRE SEDIMENT TRANSPORT CHANNEL

- Includes four models with the flume for comprehensive experimentation options
- Digital flowmeter for quick and accurate measurements
- Transparent sides for clear visibility, ideal for group demonstrations
- Stainless steel beam and toughened glass channel walls, provides long-lasting use with sedimentation
- Built-in recirculating water supply for convenient laboratory use
- Includes two bags of graded sand for sediment experiments, e.g. bed form development or scour



SUBCRITICAL AND CRITICAL FLOW PAST A PIER

ALTERNATIVE PRODUCTS:

- 2.5-Metre Flow Channel (FC50-2.5)
- Flow Channels (FC300)

The FC80 Flow and Sediment Transport Channel working sections are 80 mm in width and 247 mm deep. They are available in 2.5 metre and 5 metre lengths. Each flume has a built-in recirculating water supply connected to a digital flowmeter for accurate measurements during experimentation.

The models included with each flume are:

- Broad-crested weir
- Sharp-crested weir
- Venturi flume
- Sluice gate



BROAD-CRESTED WEIR

LEARNING OUTCOMES:

- Investigations in fixed and smooth bedform
- Mechanics of sediment transport
- Local (bridge) scour experiments, to understand scour holes and effects on the integrity of a structure
- 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
- 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

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5-METRE SEDIMENT TRANSPORT CHANNEL



FLOW UNDER A SLUICE GATE

RECOMMENDED ANCILLARIES:

OPTIONAL MODELS:

			
DRUM GATE FC80A	RADIAL SECTOR GATE FC80B	CRUMP WEIR FC80D	DAM SPILLWAY FC80E
			
STREAMLINED HUMPH FC80G	PARSHALL FLUME - REQUIRES VENTURI SIDES (INCL) FC80H	BRIDGE PIERS - CYLINDER, ROUND, SQUARE, SHARP NOSE FC80J	ROUGHENED BED FC80K
			
WAVE GENERATOR AND BEACH FC80N	SIPHON SPILLWAY FC80L	CULVERT MODEL FC80P	FLOW SPLITTER FC80V

