



## P6245 FLOW CHANNEL

### INTRODUCTION

Cussons P6245 Flow Channel equipment allows the student to study water flow in an open channel and also verify the Chézy equation and Mannings Friction Factor. It is designed for use with Cussons P6100 Hydraulics Bench fitted with P6101 Auxiliary Pump Unit, but can be used as a stand alone unit when connected to a suitable water supply and drain.

### DESCRIPTION

The apparatus consists of an open channel of rectangular cross section supported at each end by frames, one of which is adjustable so that the slope of the channel may be varied. The channel walls are made from clear acrylic plastic so that full visibility of the flow characteristics can be achieved. A number of test models are provided along with inclinometer and surface profile measuring instrument. This Flow Channel provides a low cost experiment with an accuracy comparable with larger scale channel investigations. The nominal dimensions of the channel are 55 mm x 175 mm x 2500 mm long.

### EXPERIMENTAL CAPABILITIES

- ◆ Study of uniform flow in inclined channel, verification of Chézy equation and determination of Chézy Coefficient and Mannings Friction Factor.
- ◆ Study of flow over triangular hump section, plotting of 'Specific energy - Depth' relationships, comparison of theoretical and experimental values of critical height.
- ◆ Study of flow under a sluice gate (undershot weir) with application of Specific Energy and Momentum Functions.
- ◆ Hydraulic jump - determination of energy head and power loss at the jump section by means of specific energy considerations.

- ◆ Study of long base weir and calibration of broad crested weir.
- ◆ Study of Venturi Flume, observation of flow through a throated Flume, calibration of the Flume when used as a flow measuring instrument.
- ◆ Calibration of sharp crested, thin plate overshot weirs.
- ◆ Client may insert roughened surface in the channel for friction factor studies.
- ◆ Determination of Hydraulic Mean Depth for the flow channel.

### TENDER SPECIFICATION

#### P6245 - Flow Channel

Flow Channel apparatus comprising flow straightening section at inlet complete with set of glass beads mounted on stand with spirit level micrometer level adjustment screw, set of weirs including sharp crested, overshot weir, triangular hump section weir, broad crested weir, hydraulic jump sluice gate and water supply pipe. Outlet flow controlled by undershot weir.

*Services Required:-* Water supply and drain.

### OPTIONAL ACCESSORIES

P6100 Hydraulics Bench

P6101 Auxiliary Pump Unit

### PHYSICAL DETAILS

	Nett Weight		Length		Width		Height	
	kg	lb	m	in	m	in	m	in
P6245	34	75	2.8	112	0.6	23	1.4	54