

STUDY OF FLOW IN AN OPEN CHANNEL- LARGE SECTION



Experimental capabilities

- Study of a system of open channel
- Study of a sub critical flow
- Study of a supercritical flow
- Effect of the inclination of the channel
- Study of various weirs
- Calculations of flow rates
- Visualization of flows

Operating principle

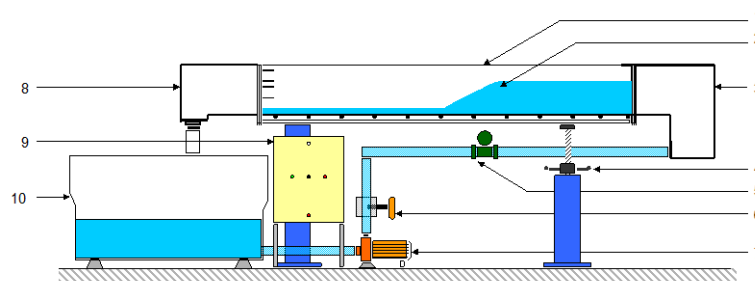
The experimental flume BCI 100 with a closed water circuit has a cross-section of 160x340mm. The length of the experimental section is of 4 m. The side walls of the experimental section are made of transparent glass reinforced , which allows excellent observation of the experiments. All components that come into contact with water are made of corrosion-resistant materials (stainless steel, glass reinforced plastic). The inlet element is designed so that the flow enters the experimental section with very little turbulence. The inclination of the experimental flume can be finely adjusted to allow simulation of slope and to create a uniform flow at a constant discharge depth. A wide selection of models, such as weirs, piers, flow-measuring flumes or a wave generator are available as accessories and ensure a comprehensive programme of experiments. Most models are quickly and safely bolted to the bottom of the experimental section.

The robust design of this device makes it suitable for use in schools.

The equipment is set up on an steel coated frame. The frame is also equipped with adjustable feet with rubber to avoid vibrations. This gives it great strength and a flexibility of integration into your laboratory.

The manufacture of this equipment complies with the European standard for machinery manufacturing.

Illustrations



TECHNICAL SPECIFICATIONS

1 Open channel

Transparent walls
Section: 160X340mm
Length : 4000mm

The channel is equipped with a movable limnimeter for measuring the depth

2 Location for weirs

4 weirs provided :

- weir with thin wall without lateral contraction
- weir with thin wall lateral contraction
- weir with thin-walled triangular
- weir with thick threshold

Other weirs are optional (not included)

3 Tank upstream plenum

Polyethylene beige tank
Drain valve in the lower part

4 Mechanical inclination system

Screw system
Manual actuation
An inclinometer indicates the angle of inclination

5 Flowmeter

Electromagnetic flowmeter
Local digital display

6 Flow rate control valve

7 Circulation pump

Centrifugal motor pump
Q = 0-120 m³/h ; Hmt = 18 mCE
The pump speed is controlled by a frequency with manual setpoint

8 Tank plenum downstream

Polyethylene beige tank
Direct flow in the storage tank

9 Electrical box

- Main switch
- LED voltage presence
- Start / stopping the pump
- Setting the pump speed
- button for emergency stop

10 Weir of water storage

Green fiber tank
Transparent lid
Drain valve in the lower part
Low level sensor -Volume : 500 L

BCI100



Services required

- Electrical supply : 400 VAC three phase - 50Hz - 10A
- Supply in Water : 500 L (tank)
- Dimensions (LxWxH mm) : 5500 x 1000 x 1900
- weight (Kg): 460 (empty)

Note : if the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

Documentation

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE

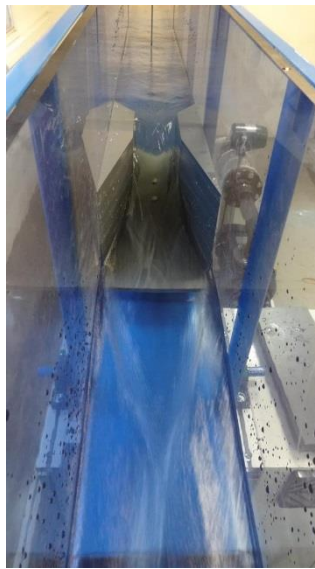
Example of weirs



Weir thick threshold



Rough Floor







Flume Venturi



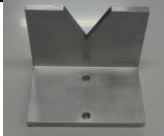


Bridge Piers

POSSIBLE OPTIONAL ACCESSORIES (not supplied)

<i>BCI 107</i>	<i>Ogee Weir</i>	
<i>BCI 110</i>	<i>Guillotine Dam</i>	
<i>BCI 103</i>	<i>Partial contraction</i>	
<i>BCI 104</i>	<i>Rough floor</i>	
<i>BCI 100 included</i>	<i>Weir thick threshold</i>	
<i>BCI 105</i>	<i>Prismatic Weir</i>	
<i>BCI 106</i>	<i>Siphon Weir</i>	
<i>BCI 108</i>	<i>Flume Venturi</i>	
<i>BCI 100 included</i>	<i>Thin wall weir</i>	
<i>BCI 100 included</i>	<i>Thin-walled weir with lateral contraction</i>	

BCI100



<i>BCI 100 included</i>	<i>Triangular thin walled weir</i>	
<i>BCI 102</i>	<i>Rectangular bridge pier</i>	
<i>BCI 109</i>	<i>Profiled bridge pier</i>	
<i>BCI 111</i>	<i>Wave generator</i>	