



## HYDRODYNAMIC CHANNEL



### DL DKL051

This trainer has been designed for the study of the behavior of fluids in open channels.

Characteristics:

- Autonomous operation, it only requires a power outlet.
- Possibility to create a negative and positive slope of the channel.
- Various elements of reading, gauge intakes, level meter, Pitot tube, etc.
- Wide range of accessories for the study of multiple phenomena.

### TRAINING OBJECTIVES\*

It is possible to perform several experiments in the following knowledge areas:

- Study of flow through open channels, measuring variables such as:
  - Water height.
  - Speed at different points of a cross section.
- Study of uniform flow, gradually varied flow and behavior of surface profiles.
- Study and use thin edged weir to measure flows.
  - Rectangular weir without lateral contraction.
- Study and use broad crested weir to measure flows.
  - Rectangular weir.
  - Triangular weir.
- Study and utilization of the Venturi channel.
- Analysis and study of the flow under sumps.
  - Vertical weir.
  - Radial weir.
- Study of hydraulic jump.
- Flow analysis on dam spillways.



# FLUID MECHANICS



\* Some of the practices described require optional accessories.

## Requirements:

- Power supply: Single-phase from the mains, 50/60Hz.

## TECHNICAL DATA

### Gauges

- Multi-column pressure gauge for pressure readings located beneath the channel.

### Working section

- Height/width: 300/80mm.
- Length: 2500mm.

### Centrifugal water pump

- Power: 1,1 kW (1.5 HP).
- Max. flow: 24m<sup>3</sup>/h.
- Maximum manometric head: 14,3 MWC.

### Flow meter

- Electronic flow meter with display.

### Slope

- Adjustable -1% ÷ +3% of its longitude.

**OPTIONAL ACCESSORIES ARE AVAILABLE BUT NOT INCLUDED WITH THE TRAINER, SEE BELOW.**



## OPTIONAL ACCESSORIES (NOT INCLUDED WITH THE TRAINER)

**DL DKL0514TM**  
**FOUR COLUMN MANOMETER**



**Characteristics:**  
250mm height.  
Double seal connections.  
Coupling channel with adjustable tilt angle.

**DL DKL051PL**  
**PITOT TUBE AND LEVEL METER**



**Characteristics:**  
Composed by a Pitot tube and a level meter, connected to a caliber for accurate readings.  
High accuracy digital gauge.  
Pitot sealing connection.  
Easy coupling to the channel walls.

**DL DKL051TPW**  
**THIN EDGED WALL WEIR WITHOUT  
CONTRACTION**



**Characteristics:**  
Rubber sealing profiles on the side of the tip.  
Easy placement on the floor of the channel.  
Weir with upper side sharpened.  
Weir height 130mm.

**DL DKL051VG**  
**VERTICAL WEIR**



**Characteristics:**  
Rubber sealing profiles on the side of the tip.  
Lifting weir system allowing fast opening to overflow or allowing a controlled opening for easy adjustment at the desired height.  
Easy placement on the channel walls.



## DL DKL051RG RADIAL WEIR



### Characteristics:

- Rubber sealing profiles on the side of the tip.
- Lifting weir system allowing fast opening to overflow or allowing a controlled opening for easy adjustment at the desired height.
- Easy placement on the channel walls.
- Stainless steel structure.

## DL DKL051MN INCLINED MANOMETER



### Characteristics:

- Maximum height 250 mm.
- Angular tilt regulation of the tube manometer.
- Connections with double sealing.
- Connection to channel with adjustable tilt angle.

## DL DKL051BC BROAD CRESTED WEIR



### Characteristics:

- Rubber sealing profiles on the side of the tip.
- Easy placement on the floor of the channel.
- Dimensions 250 x 150 mm height.
- Radius at one extremity 25 mm, one extremity with sharp crest.

## DL DKL051CW CRUMP WEIR



### Characteristics:

- Rubber sealing profiles on the side of the tip.
- Easy placement on the floor of the channel.
- Dimensions 273 x 50 mm height.
- Angle at extremities 15° and 30°.



## DL DKL051OCW OGEE CRESTED WEIR



### Characteristics:

Weir to study the behavior of a water spillway and analyze the discharge flow originated.

Rubber sealing profiles on the side of the tip.

Easy placement on the floor of the channel.

Weir height 150 mm.

## DL DKL051SW SIPHON WEIR



### Characteristics:

Accessory to be easily installed on the floor of the channel.

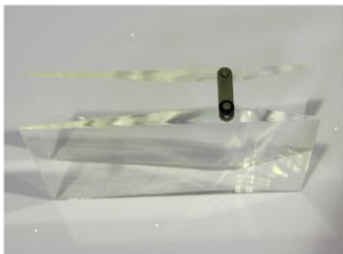
It creates a closed channel that grants a bigger water flow than an open channel due to the suction effect.

Rubber sealing profiles on the side of the tip.

Easy placement on the floor of the channel.

Built in transparent methacrylate.

## DL DKL051VT VENTURI



### Characteristics:

Accessory to be easily installed on the floor of the channel.

It creates a narrowing in its horizontal section.

Through the Pitot tube, it is possible to perform many experiments according to the Bernoulli equation.

Easy placement on the floor of the channel.

Built in transparent methacrylate.