

Flow Through Orifices Apparatus (EDC-FM-1130)

EXPERIMENTAL DATA:

- To determine contraction and velocity coefficients
- Calculation of discharge coefficient
- To determine actual discharge coefficient, and comparison with calculated values.
- To determine flow rate at different discharge heads
- Study of pressure losses in vertical flows from tanks.
- Direct measurement of total head, head loss and diameter of vertical water jet.

DESCRIPTION:

This unit includes a transparent PMMA tank, a measuring device as well as a Pitot tube and twin tube manometers. An interchangeable mouthpiece is installed in the tank's water outlet to facilitate the investigation of various openings. Five mouthpieces with different diameters, inlet contours and outlet contours are provided along with the unit. Pressure losses in the flow from tanks are essentially the result of two processes: the jet deflection upon entry into the opening and the wall friction in the opening. As a result of the pressure losses the real discharge is smaller than the theoretical flow rate. Different diameters as well as inlet and outlet contours of the openings can be studied. Additionally, the contraction coefficient can be determined as a characteristic for different contours. The issued water jet is measured using a measuring device. A Pitot tube detects the total pressure of the flow. The pressure difference (read on the manometer) is used to determine the velocity.

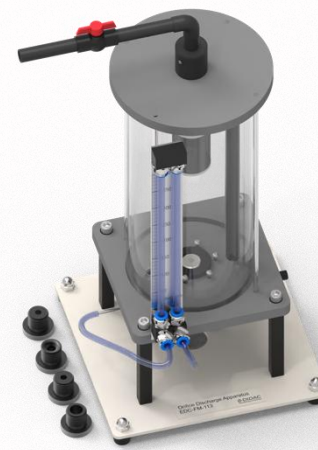
The experimental unit is positioned easily and securely on the work surface of the EDC-FM-100HB base module. The water is supplied and the flow rate measured by EDC-FM-100HB. Alternatively, the experimental unit can be operated by the laboratory supply.

SCOPE OF DELIVERY:

- 1 x EDC-FM-1130
- 1 x Instructional Manual

DIMENSIONS AND WEIGHT:

- Minimum size: 500 x 400 x 850mm (L x W x H)
- Approximate weight: 28kg



TECHNICAL DATA:

Tank:

- Material: Transparent PMMA (Cylindrical)
- Capacity: 15L
- Adjustable overflow height: 400mm
- Maximum flow rate: 25 L/min

Mouthpieces (Interchangeable - 5 Types):

- Cylindrical hole: Inlet diameter (d_1) = 12mm, Outlet diameter (d_2) = 12mm
- Conical outlet insert: d_1 = 24mm, d_2 = 12mm
- Orifice plate inlet insert: d_1 = 24mm, d_2 = 12mm
- Conical inlet insert: d_1 = 30mm, d_2 = 12mm
- Rounded inlet insert: d = 12mm

Measuring Instruments:

- Pitot tube for total pressure measurement
- Twin-tube manometers for pressure display
- Measuring device for determining jet diameter

Measuring Ranges:

- Pressure: Up to 500mm water column (ws)
- Jet radius: 0 to 10mm

Piping & Fittings:

- PVC pipe fittings

Water Supply:

- Compatible with EDC-FM-100 base module or laboratory water supply