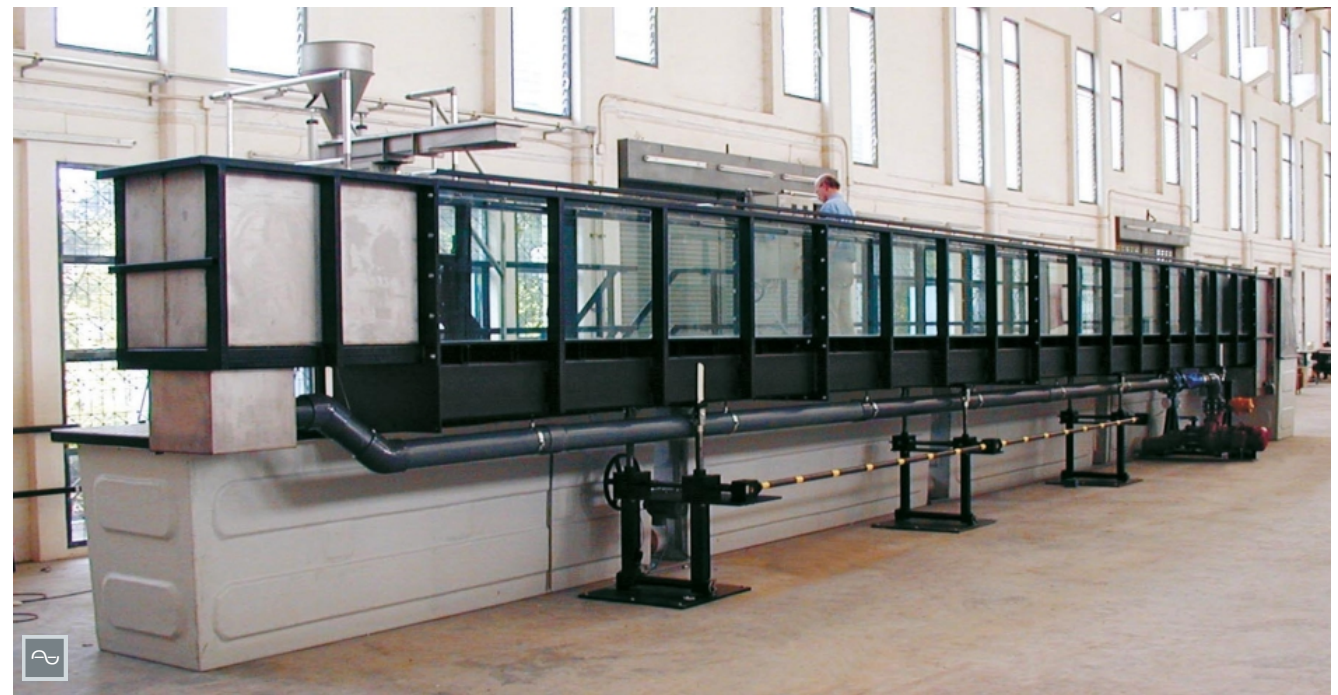


HM 161

Experimental flume 600x800mm



The illustration shows HM 161 together with the sediment feeder HM 161.73.

Description

- **experimental section with transparent side walls, length 16m**
- **homogeneous flow through carefully designed inlet element**
- **plant control with PLC via two touch panels**
- **models from all fields of hydraulic engineering available as accessories**

The experimental flume HM 161 is the largest within the GUNT product range. The flow velocities that can be achieved in the experimental flume, and the long length of the experimental section, are the perfect conditions for designing your own projects. These projects can be very close approximations of reality.

The experimental section is 16m long and has a cross-section of 600x800mm. The side walls of the experimental section are made of tempered glass, 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 closed water circuit consists of a series of water tanks and two powerful pumps. The tanks are included in the system in such a way that they also serve as a gallery which you can stand on. The user can thus comfortably reach any

part of the experimental section.

The experimental flume has a motorised inclination adjustment to allow simulation of slope and to create a uniform flow at a constant discharge depth.

The experimental flume is equipped with a comprehensive range of functions for measurement, control and operation that are controlled by a PLC. Two freely positionable touch panels display the measured values and operating states and can be used to control the system. At the same time, the measured values can be transmitted directly to a 32" monitor for distant reading and to a PC via LAN where they can be analysed with the software.

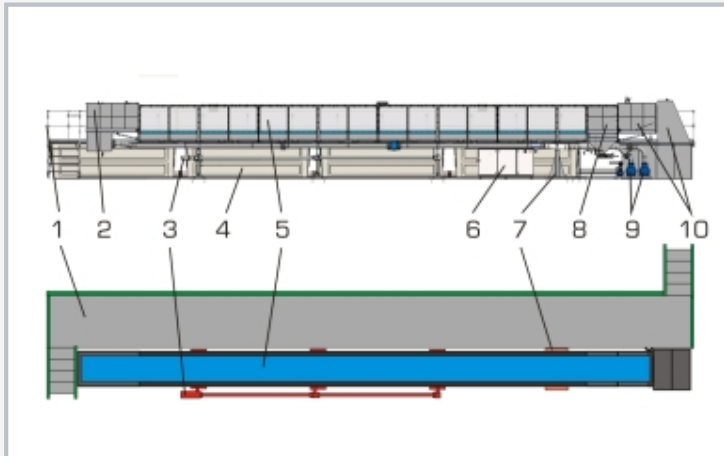
A wide selection of models, such as weirs, piers, flow-measuring flumes or a wave generator are available as accessories and ensure a comprehensive programme of experiments. Most models are quickly and safely bolted to the bottom of the experimental section.

Learning objectives/experiments

- together with optionally available models
 - ▶ uniform and non-uniform discharge
 - ▶ flow formulae
 - ▶ flow transition (hydraulic jump)
 - ▶ energy dissipation (hydraulic jump, stilling basin)
 - ▶ flow over control structures: weirs (sharp-crested, broad-crested, ogee-crested)
 - ▶ flow over control structures: discharge under gates
 - ▶ flow-measuring flumes
 - ▶ local losses due to obstacles
 - ▶ water surface profiles
 - ▶ transient flow: waves
 - ▶ vibrating piles
 - ▶ sediment transport

HM 161

Experimental flume 600x800mm



1 gallery, 2 inlet element, 3 jacking support with motorised inclination adjustment, 4 water tank, 5 experimental section, 6 switch cabinet, 7 fixed support, 8 sediment trap HM 161.72, 9 pump, 10 outlet element



Hydraulic jump



Monitor with display of measured values and operating states, freely positionable touch panel (left) and screenshots of the PLC (right)

Specification

- [1] basic principles of open-channel flow
- [2] experimental flume with experimental section, inlet and outlet element and closed water circuit
- [3] smoothly adjustable inclination of the experimental section
- [4] experimental section with evenly spaced threaded holes on the bottom for installing models or for pressure measurement
- [5] side walls of experimental section made of tempered glass for excellent observation of the experiments
- [6] experimental section with guide rails for the optionally available instrument carrier HM 161.59
- [7] all surfaces in contact with water are made of corrosion-resistant materials
- [8] flow-optimised inlet element for low-turbulence entry into the experimental section
- [9] closed water circuit with water tanks, pumps, electromagnetic flow sensor and flow control
- [10] gallery that can be walked on
- [11] PLC with 2 freely positionable touch panels and a 32" monitor for control of the plant
- [12] models from all fields of hydraulic engineering available as accessories
- [13] GUNT software for data acquisition via LAN under Windows 10

Technical data

Experimental section

- length: 16m
- flow cross-section WxH: 600x800mm
- 3 spindle-type lifting gears

Tanks

- 1x 3600L
- 4x 4300L

2 pumps

- power consumption: 18,5kW
- max. flow rate: 228m³/h
- max. head: 35m

Measuring ranges

- flow rate: 0...440m³/h
- inclination: -0,75...2,1%

400V, 50Hz, 3 phases

400V, 60Hz, 3 phases

230V, 60Hz, 3 phases

UL/CSA optional

LxWxH: 22000x4000x2700mm

Weight: approx. 13000kg

Required for operation

PC with Windows recommended

Scope of delivery

- 1 experimental flume
- 2 touch panels, 1 32" monitor
- 1 GUNT software
- 1 set of accessories
- 1 set of instructional material

HM 161

Experimental flume 600x800mm

Optional accessories

Control structures

070.16129	HM 161.29	Sluice gate
070.16140	HM 161.40	Radial gate
070.16130	HM 161.30	Set of plate weirs, four types
070.16131	HM 161.31	Broad-crested weir
070.16133	HM 161.33	Crump weir
070.16136	HM 161.36	Siphon weir
070.16138	HM 161.38	Rake
070.16134	HM 161.34	Ogee-crested weir with pressure measurement
070.16132	HM 161.32	Ogee-crested weir with two weir outlets
070.16135	HM 161.35	Elements for energy dissipation

Change in cross-section

070.16144	HM 161.44	Sill
070.16145	HM 161.45	Culvert
070.16146	HM 161.46	Set of piers, seven profiles
070.16177	HM 161.77	Flume bottom with pebble stones

Flow-measuring flumes

070.16151	HM 161.51	Venturi flume
070.16155	HM 161.55	Parshall flume
070.16163	HM 161.63	Trapezoidal flume

Other experiments

070.16141	HM 161.41	Wave generator
070.16180	HM 161.80	Set of beaches
070.16161	HM 161.61	Vibrating piles
070.16171	HM 161.71	Closed sediment circuit
070.16172	HM 161.72	Sediment trap
070.16173	HM 161.73	Sediment feeder

Measuring instruments

070.16152	HM 161.52	Level gauge
070.16191	HM 161.91	Digital level gauge
070.16164	HM 161.64	Velocity meter
070.16150	HM 161.50	Pitotstatic tube
070.16153	HM 161.53	20 tube manometers
070.16113	HM 161.13	Electronic pressure measurement
070.16159	HM 161.59	Instrument carrier
070.16181	HM 161.81	PIV-System
070.16182	HM 161.82	Instrument carrier for PIV system
070.16183	HM 161.83	Glass cut-out for PIV system