

INSTRUCTIONS FOR USE

LED Ripple tank

DM200003



Composition

- 1 ripple tank
- 1 control unit
- 1 LED strobe
- 3 waves generation modules (simple circular wave, twin circular waves and straight wave)
- 7 different immersion bodies: prism, biconcave lens, biconvex lens, bodies for single or double slits

Description

The purpose of this ripple tank is to easily visualize the wave phenomena. It is possible to explain the incidence of the frequency on the celerity of the wave on the water surface.

The distance between two circles of the wave is equivalent to the wave length. $\lambda = c T$ or $f = 1/T$.

The ripple tank is composed of a strobe linked to an air pulse wave generator.

The handling and the storage of the ripple tank is easy thanks to its magnetic stroboscope and its removable drawer that contains the control unit and the accessories.

Characteristics

A. Tank :

Transportation handles.

Removable drawer with locking for the control unit and the different accessories.

Integrated emptying pipe.

Dimensions: Tank 480 x 330 x 340 mm

White screen 400 x 320 mm

Glass operating space 350 x 250 mm

B. Strobe :

LED lighting 3 W. Maximum frequency = 60 HZ.

Magnetic rod mounted.

Dimensions: 120 x 55 x 65 mm

C. Wave generator :

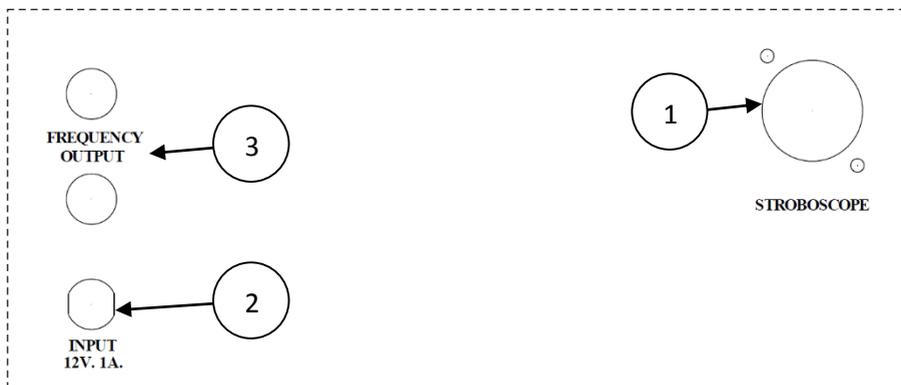
Air amplitude and frequency regulation. Maximum frequency 60Hz.

2 operation mode: synchronous or asynchronous.

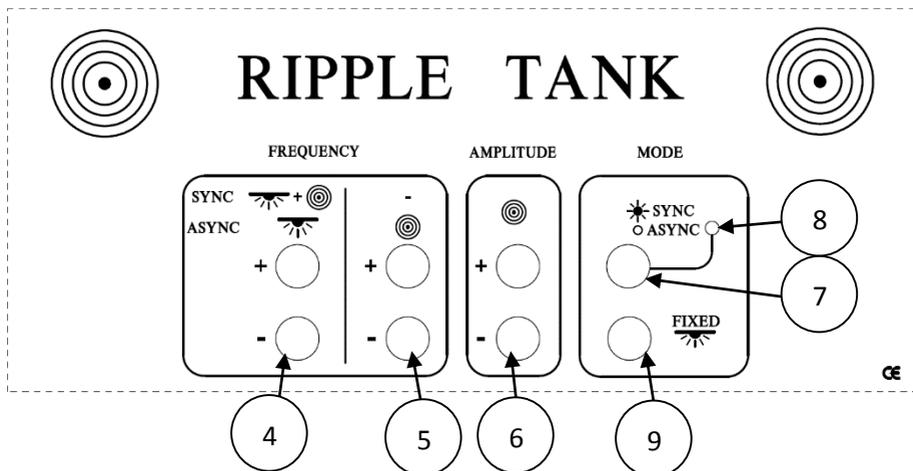
Power supply: 12 VDC / 1 A (included).

Air hose for generation module connecting included

Dimensions: 220 x 150 x 100 mm

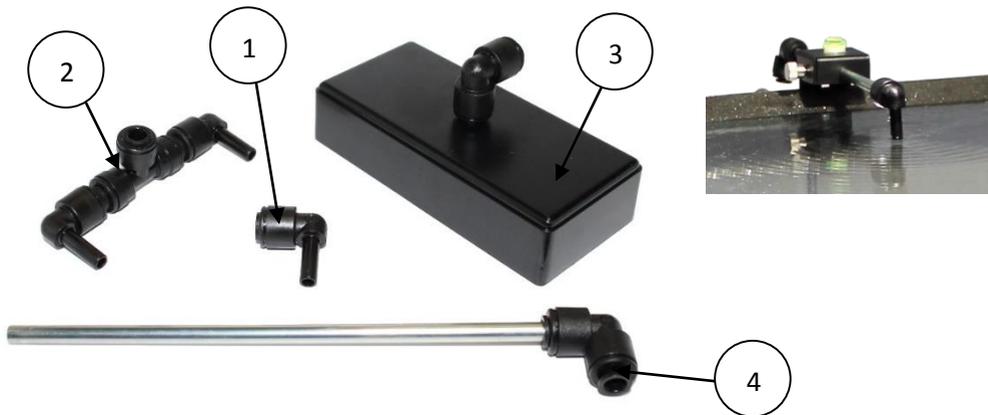


- 1- XLR socket for strobe
- 2- Socket for connecting plug-in power supply
- 3- Terminal sockets for external frequency measuring instrument



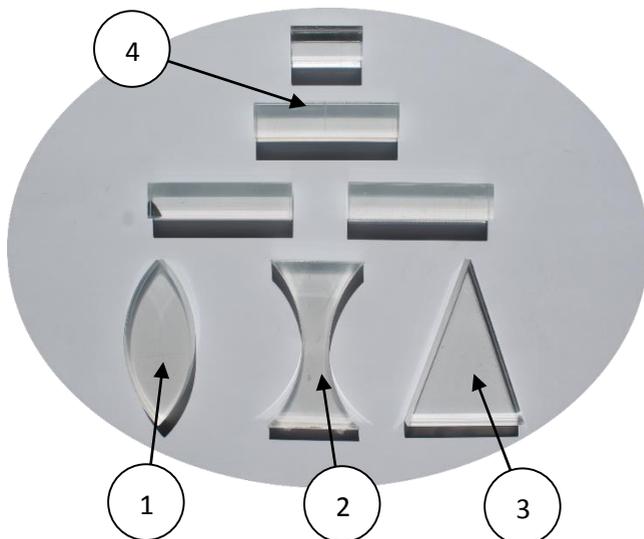
- 4- Knobs for adjusting frequency for synchronous mode and strobe frequency for asynchronous mode
- 5- Knobs for adjusting wave frequency for asynchronous mode
- 6- Knobs for adjusting wave amplitude
- 7- Switch for toggling between synchronous and asynchronous modes
- 8- Indicator light for synchronous (switched on) and asynchronous (switched off)
- 9- Switch for continuous strobe illumination

D. Wave generation modules



- 1- Simple circular wave module
- 2- Twin circular waves module
- 3- Straight wave module
- 4- connecting pipe

E. Immersion bodies



- 1- Convex lens
- 2- Concave lens
- 3- Isosceles prism
- 4- Immersion bodies with different lengths to set up a single or a double slits.

Operations

- Remove the ripple tank from its card box and put it on a plane surface.
 - Adjust the horizontality with the adjusting feet and the bubble level
 - Remove the control unit and the accessories from the drawer
 - Fix the LED strobe on the side of the tank with the plastic protection thanks to the magnetic support.
 - Connect the strobe to the control unit.
 - Fill 2/3 of the tank with distilled water
 - Connect the 12V power supply to the control unit.
 - For the utilization with an oscilloscope or a frequency measuring instrument, connect it to the control unit on the 2 security sockets $\varnothing 4$
 - Connect the air hose beside the control unit
 - Place the connecting pipe for generation module on the tank
- Utilization with single circular wave :



- Utilization with twin circular waves :



- Utilization with straight wave:



- When the control unit is switched on, the synchronous mode is on.
- Adjust the amplitude of the air with knobs n°6
- Select synchronous or asynchronous mode with knob n°7.
- In case of synchronous mode, adjust the frequency of the wave and strobe with knob n°4.
- In case of asynchronous mode, adjust the frequency of the wave with knob n°4 and the frequency of the strobe with knob n°5.

- Place the different immersion bodies in the tank for the different experiments.



Cleaning / Storage

After its utilization, empty the tank thanks to the lateral hose.

Dry correctly the glass to avoid scale deposition.

Put the tank back in its card box and storage it out of dust and humidity.

