

613-0015 50-060 Ripple Tank



Description: Project waves onto a 10 x 9" screen for viewing from a distance. Tune the wave generation of this self-contained easy-to-use apparatus to match the stroboscopic light.

Specifications and Technical Data:

1. Specifications – Overall dimensions 26" total height
2. Technical Data – Input voltage: 110 V; Operation voltage: 12 V \pm 1.2 V; Power of bromine tungsten lamp: 12 V 100 W

Warranty and Parts:

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.

How to Teach with the Ripple Tank:

Concepts Taught: Wave forming; Transmission, Reflection; Interference and Inflection

Curriculum Fit: Physical Science and Friction. **Grades 6-8 and up.**

Additional Materials Needed:

- Water

Caution: The bromine tungsten lamp can be very hot while working and cause burns, so never touch the light source cartridge during the demonstration. Do not overfill the sink as it can damage the unit.

OBSERVATIONS ARE BEST MADE IN A DARKENED ROOM.

Preparation of Ripple Tank

1. Fill the tank with clean water so that all four walls are wetted along with accessories.
2. Fix the vibrator required for wave generation on the adapting block, adjust the height of the vibration source box and make sure that the vibrator is immersed in water approximately 1-2 mm deep.
3. Connect the plugs of the light source, DC power supply and vibration source to the sockets and then connect the plug of the input power supply.

Demonstration 1: Round Wave

1. Fix the single vibrator on the adapting block.
2. Turn the power “on” and ensure the bromine tungsten lamp is “on”.
3. The round wave will appear on the screen.
4. Adjust the vibration knob so that the number of vibrations is the same as the strobe of the light source, thus giving a static wave.
5. If the vibration is greater than the strobe, the wave will disperse; however, if the vibration is less than the strobe, the wave will shrink.
6. You may need to adjust the amplitude screen if the projected image is not very clear.
7. Turn off the power when done.

Demonstration 2: Wave Inflection

1. Put two baffles in a line at about 20 mm from the vibration center.
2. Turn the power “on” and observe the wave.
3. Make adjustments to the space between the baffles to show different inflection images.
4. Turn the power off when done.

Demonstration 3: Plane Wave

1. Fix the horizontal vibrator so that the plane of the vibrator is parallel to the water’s surface. Note: The intersection part should be completely wetted, or else the image will be slightly distorted.
2. Turn the power “on” and observe. Be sure to turn the power off when done.

Demonstration 4: Wave Reflection

1. Put a straight baffle in front of the plane wave at 45°.
2. Turn the power “on” and observe the image of the reflected plane wave. Be sure to turn the power off when done.