

## 1.5.13-01 Stationary ultrasonic waves, determination of wavelength



NEW

## What you can learn about ...

- Longitudinal waves
- Superposition of waves
- Reflection of longitudinal waves
- Stationary longitudinal waves

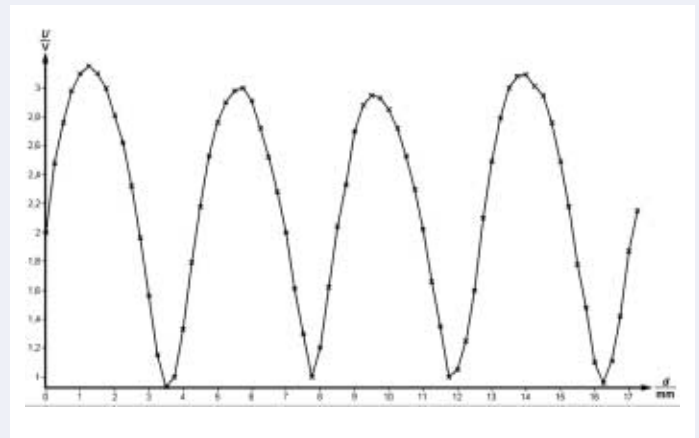
## Principle:

An ultrasonic wave is subjected to hard surface reflection from a metal plate. The reflected wave superimposes on the incident wave, coincident in phase and amplitude, to form a standing wave. The intensity of this wave along the direction of propagation is measured using a movable ultrasonic receiver.

## What you need:

Ultrasonic unit	13900.00	1
Power supply f. ultrasonic unit, 5 VDC, 12 W	13900.99	1
Ultrasonic transmitter on stem	13901.00	1
Ultrasonic receiver on stem	13902.00	1
Digital multimeter	07134.00	1
Optical profile-bench, $l = 60$ cm	08283.00	1
Base f. opt. profile-bench, adjust.	08284.00	2
Slide mount f. opt. profile-bench, $h = 80$ mm	08286.02	1
Slide mount f. opt. profile-bench, $h = 30$ mm	08286.01	2
Sliding device, horizontal	08713.00	1
Swinging arm	08256.00	1
Screen metal, 30×30 cm	08062.00	1
Connecting cord, $l = 50$ cm, red	07361.01	1
Connecting cord, $l = 50$ cm, blue	07361.04	1

**Complete Equipment Set, Manual on CD-ROM included**  
**Stationary ultrasonic waves, determination of wavelength** P2151301



The change in the sound pressure intensity in the direction of propagation as a function of the distance.

## Tasks:

1. Determine the intensity of a standing ultrasonic wave by moving an ultrasonic receiver along the direction of propagation.
2. Plot a graph of the measured values against the distance.
3. Determine the wavelength of the ultrasonic wave.