

1.5.15-11 Ultrasonic diffraction at different single and double slit systems with Cobra3



What you can learn about ...

- Huygens principle
- Longitudinal waves
- Interference
- Fraunhofer and Fresnel diffraction

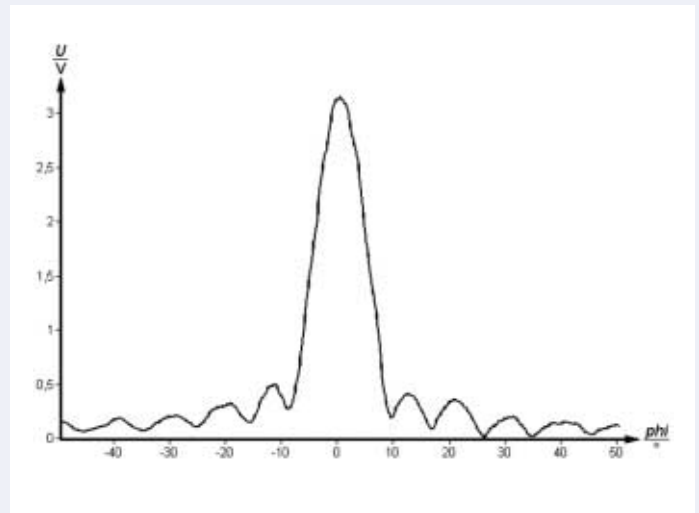
Principle:

A plane ultrasonic wave is subjected to diffraction at single slits of various widths and at various double slits. The intensity of the diffracted and interfering partial waves are automatically recorded using a motor-driven, swivel ultrasound detector and an interface system.

What you need:

Goniometer with reflecting mirror	13903.00	1
Power supply for goniometer	13903.99	1
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
Object holder f. ultrasonic	13904.00	1
Diffraction objects f. ultrasonic	13905.00	1
Cobra3 Basic Unit	12150.00	1
Power supply, 12 V-	12151.99	1
RS 232 data cable	14602.00	1
Measuring tape, $l = 2$ m	09936.00	1
Software Cobra3 universal recorder	14504.61	1
Connecting cord, $l = 50$ cm, yellow	07361.02	4
PC, Windows® 95 or higher		

Complete Equipment Set, Manual on CD-ROM included
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The angular distribution of the intensity of a plane ultrasonic wave diffracted at a slit.

Tasks:

1. Record the intensity of an ultrasonic wave diffracted by various single slits and double slits as a function of the diffraction angle.
2. Determine the angular positions of the maximum and minimum values and compare them with the theoretical values.