

Ultrasonic diffraction at different multiple slit systems with Cobra3 1.5.16-11



What you can learn about ...

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

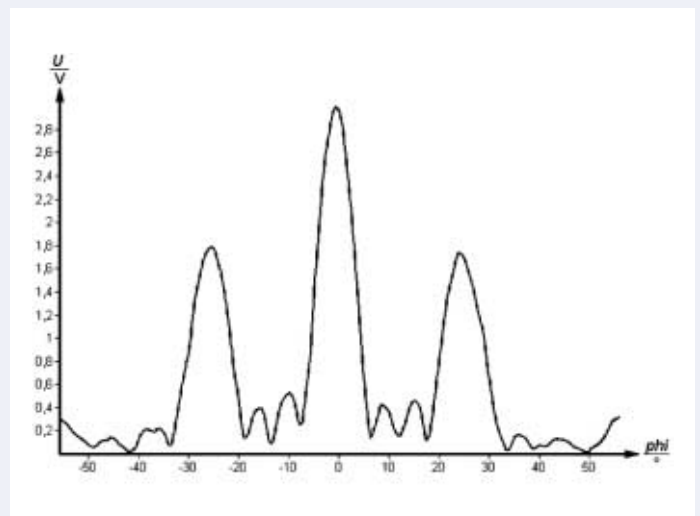
Principle:

A plane ultrasonic wave is subjected to diffraction at various multiple 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, $l = 2\text{m}$	09936.00	1
Software Cobra3 universal recorder	14504.61	1
Connecting cord, $l = 50\text{cm}$, 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 by a fourfold slit.

Tasks:

1. Determine the angular distribution of a plane ultrasonic wave diffracted by various multiple slits.
2. Determine the angular positions of the maximum and minimum values and compare them with the theoretical values.