

Product Code . JL-PLE-7959

Lattice Dynamics Kit



Description

Lattice Dynamics Kit

Lattice dynamics is an essential component of any postgraduate course in Physics, Engineering Physics, Electronic Engineering and Material Science.

In general, students find it difficult to understand involved concepts like acoustical mode, optical mode, and energy gap etc, which they cannot see for themselves in the laboratory.

In particular, it is essential to understanding the interaction of electromagnetic waves and crystalline solids.

Such a difficulty can be overcome by introducing a laboratory exercise in which the student follows a carefully prescribed procedure, which presents him with a simplified model of the system and allows him to verify well-established theories.

In the process, he gains an insight into the concepts.

The lattice dynamic Kit provides such an experience in the study of mono and di-atomic lattices.

The following experiments may be performed with the help of this kit:

1. Study of the Dispersion relation for the “Mono-atomic Lattice” and Comparison with theory.
2. Determination of the Cut-off frequency of the Monoatomic Lattice.

3. Study of the Dispersion relation for the Di-atomic Lattice, Acoustical mode and Energy gap. Comparison with theory.

It consists of an Audio oscillator with amplitude control and facility to vary the frequency from 0.9 KHz to 90 KHz.

Another part of Lattice Dynamic Kit consists of the transmission line, which simulates one-dimensional mono-atomic and di-atomic lattices.

It has a built-in power supply and output stage to match the impedance of simulated lattice.

The only additional equipment needed is a General purpose C.R.O.
