

## Lock-In Amplifier

### Equipment:

He-Ne laser, photodiode, chopper, lock-in amplifier, oscilloscope

### Goals:

Learn how a lock-in works (should understand the principles of phase-sensitive detection, dynamic reserve, and time constants)

Learn how to use a lock-in amplifier

Determine whether your photodiode is operating in the linear range

Determine the frequency response of your photodiode

Determine whether the frequency response is independent of intensity